

**Report on the Biodiversity Assessment carried out
in the Estates Managed by Lalan Rubber Private Ltd.
in Kurunegala and Kegalle Districts**



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Executive Summary

This report presents the findings of an ongoing biodiversity assessment of 15 estates managed by Lalan Rubbers Pvt. Limited in the Kurunegala and Kegalle districts. The estates that are to be assessed include Woodend, Densworth, Mahaoya, Ilukthenna, Reucastle, Sapumalkande, Udabage, Eila, Miyanawita, Dabar and Udapola located in the Deraniyagala area and Muwankanda, Pitiyekanda, Notinghill and Keppetigala in the Kurunegala area.

The biodiversity assessment has been carried out to collect information on the present status of the biodiversity in the 15 estates managed by the Lalan Rubbers Pvt Ltd so that they are able to take effective decisions with respect to maintaining a representative sample of native ecosystems within their managed landscape in order to preserve the biodiversity contained in these ecosystems and thereby ensure that they continue to provide ecosystem services to the local community as well as contribute to achieve national and global biodiversity targets.

Therefore, the biodiversity assessment has been designed to generate the necessary data that would make it possible for plantation managers to align their natural resources management strategies with FSC principles, specifically principle 6 (environmental values and impacts), principle 8 (monitoring and assessment), principle 9 (high conservation values) and principle 10 (implementation of management activities).

The results of the assessment indicate that these 15 estates, especially the natural areas within the estates support a rich assemblage of fauna and flora and the plantation management has taken the necessary steps to protect as well as continuously monitor these natural areas to ensure that they remain undisturbed from the plantation related activities.

A total of 567 plant species including 80 endemic, 328 indigenous and 159 introduced species were recorded in all the habitats within the 15 estates assessed. Further, 79 plant species recorded during the assessment are listed as Nationally Threatened species. Likewise, a total of 387 animal species including 106 endemic, 281 indigenous and 1 introduced butterfly species were recorded in all the habitats within the 15 estates assessed. Further, 79 animal species recorded during the assessment are listed as Nationally Threatened species. Number of critical species and habitats have been recorded for the first time during the current assessment which are described under section 4.

Results of the present assessment indicates that the total species richness is higher in the current survey for all the eight taxonomic groups included in this assessment. The number of endemic and threatened species recorded was also high for seven out of the eight taxonomic groups considered during the present survey compared to the previous surveys. Therefore, it can be inferred that compared to the previous surveys, the species richness as well as number of endemic and threatened species remains equal or higher in most instances. It should be noted that some of the species recorded during the previous assessments have not been recorded during the present survey and number of new species including endemic and threatened species have been newly recorded during the present assessment.

However, the observed increase in the species richness and number of endemic species and threatened species must be interpreted carefully. Generally, the number of species in a landscape increase as the habitats in the landscape improves creating new niches which will be colonized by new species, which is an indication of good land use management. However, this result must be interpreted carefully since the outcome of an assessment based on which a decision is taken about changes in species composition of a landscape can depend on number of other factors such as sampling effort, time of sampling, skill of the observers, changes in the taxonomic and threat status of species, which cannot be completely standardized across assessments. Thus, all these aspects will have to be given due consideration when undertaking an objective comparison across time to identify long term trends in species composition of a landscape.

However, based on this data it can be safely concluded that the species richness as well as number of critical species (endemic and threatened species) have not undergone a decline between the two assessments. Further, it should be noted that the Lalan landscape supports a significant proportion of the species reported in Sri Lanka for the eight taxonomic groups considered in the biodiversity assessment. This indicates that the even a production landscape for perineal crops, if well managed can serve as an important biodiversity refuge for native and endemic species, a fact that has been grossly overlooked by the conservation planners. Thus, results of this assessment indicate that a well-managed production landscape can play an important role in the biodiversity conservation and should receive equal attention as conservation landscapes such as protected areas. Further, estate management should be encouraged and rewarded for the role they play in overall biodiversity conservation efforts of the country.

1. Introduction:

1.1 Biodiversity

Biodiversity refers to the diversity that can be seen within and between species as well as the complex ecosystems formed by species due to their interactions with the non-living components of the environment at a given time and space. For the purpose of this report the definition stated below, which has been adopted from the Convention on Biological Diversity (CBD) shall be used.

"Biological diversity means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems"

Convention on Biological Diversity

Thus, biodiversity can be measured as

- A. **Genetic Diversity:** Genetic diversity is the total variety of genes within a single species. A species is made up of number of different individuals, and each individual is made up of thousands of individual genes. Pooling all of the genes in a species gives a measure of the genetic variety of the species.
- B. **Species Diversity:** Number of different species will occur in a given landscape. The total number of different species that are present in the landscape is defined as the species diversity. Endemic species are restricted to one location and have relatively small ranges, and they tend to be much more vulnerable to human activity than are more widely distributed species, because it is easier to destroy all the habitat in a small geographic range than in a large one. Thus, the presence of endemic species in an area provides additional insight into the area's ecological quality or value.
- C. **Ecosystem Diversity:** A region, whether it is a landscape, a country, or a continent, may be represented by one or more ecosystems. The greater the variety of ecosystem types, the greater the number of species that could potentially live there. Consequently, ecosystem diversity (the total number of ecosystems in a region) can be used to get an idea of its biodiversity. As with endemic species, a unique ecosystem (one that occurs in only one location of the planet) may provide an indication of the region's value in terms of biodiversity. As such, a unique ecosystem may have a distinctive ecological structure with an unusual combination of species that have evolved novel physical adaptations and behaviours that allow them to survive.

The biodiversity of a given landscape is not static but undergoes dynamic changes over time. These changes will be governed by number of biological and physical factors, *inter alia*, colonization by species, symbionts that enter with colonizing species, emergence of new species, extinction of species, soil type, topography, climate (includes a combination of attributes such as solar radiation, temperature, humidity, precipitation, atmospheric pressure and wind), extent of the landscape where homogeneous physical conditions prevail, latitude, longitude and altitude as well as processes such as ecological succession, climate change and chains of extinctions.

These, natural phenomena serve as the key drivers that determine the establishment of natural ecosystems in a given landscape and humans influence these natural ecosystems by conversion, degradation, destruction, fragmentation, overexploitation etc.,

Any given land use type supports biodiversity irrespective of whether it is natural or manmade. Any land use change will change two fundamental aspects of biodiversity: change in the structure and composition of the ecosystem. This in turn will influence the function of the ecosystem and therefore the ecosystem services provided. The impact of these change can be measured using various attributes and indices calculated based on species, their abundance, and their attributes.

1.2 Plantation landscape in Sri Lanka

Nearly 900,000 ha of forest land have been converted to Tea, Rubber and Coconut during the colonial period (ca. from 1830 to 1948). Tea and Rubber alone accounts for 22% of the land use in the wet zone while protected areas account for only 14% of the wet zone. The estate sector in the wet zone covers a significant land area spanning from sea level to high mountains and are known to harbor many endemic and threatened species. Further, about 20% of the land area under tea and rubber (60000 ha) is estimated to be natural forests or plantation forest. Yet the biodiversity that exist within the lands that are under tea and rubber is not considered in National Conservation planning or biodiversity estimations. Therefore, if the land under natural forest or forest plantation within the tea and rubber plantations can help increase the land available for biodiversity conservation in the wet zone by approximately 4% which can improve efforts to conserve critical biodiversity elements in the wet zone significantly. Further the stream network within the tea and rubber cultivated lands, especially in the lower and mid elevations can play a significant role in conservation of freshwater fish in Sri Lanka.

Thus, it is important to recognize that estate sector can play an indirect role in the protection of critical biodiversity resources through sustainable land management, which in turn will help the plantation sector to obtain a better price for their products by showcasing that their production is done in a sustainable manner. Further, protecting these biodiversity resources will provide the plantations with the opportunity to diversify their income generation through emerging novel financing mechanisms such as ecolabelling, payment for ecosystem services, carbon credits, biodiversity credits etc.,

1.3 Plantations of Lalan Rubbers Pvt. Limited

Lalan Rubbers Pvt. Limited is one of the leading plantation companies in Sri Lanka. Lalan Rubbers Agri Division (LRAD) is a subsidiary of Lalan Rubbers Pvt. Ltd, which manages about 8700 ha of lands under various plantation crops. There are fifteen estates which are being managed by LRAD. These fifteen estates are clustered into 5 Groups, namely, Mahaoya, Sapumalkande, Udabage, Miyanawita and Pitiakande. Pitiakanda group of estates is located in the southeastern part of the Kurunegala District and the northwestern corner of the Kandy District (Figure 01) whereas the remaining four groups are located around Deraniyagala and Dehiowita in the southern part of the Kegalle District (Figure 02).

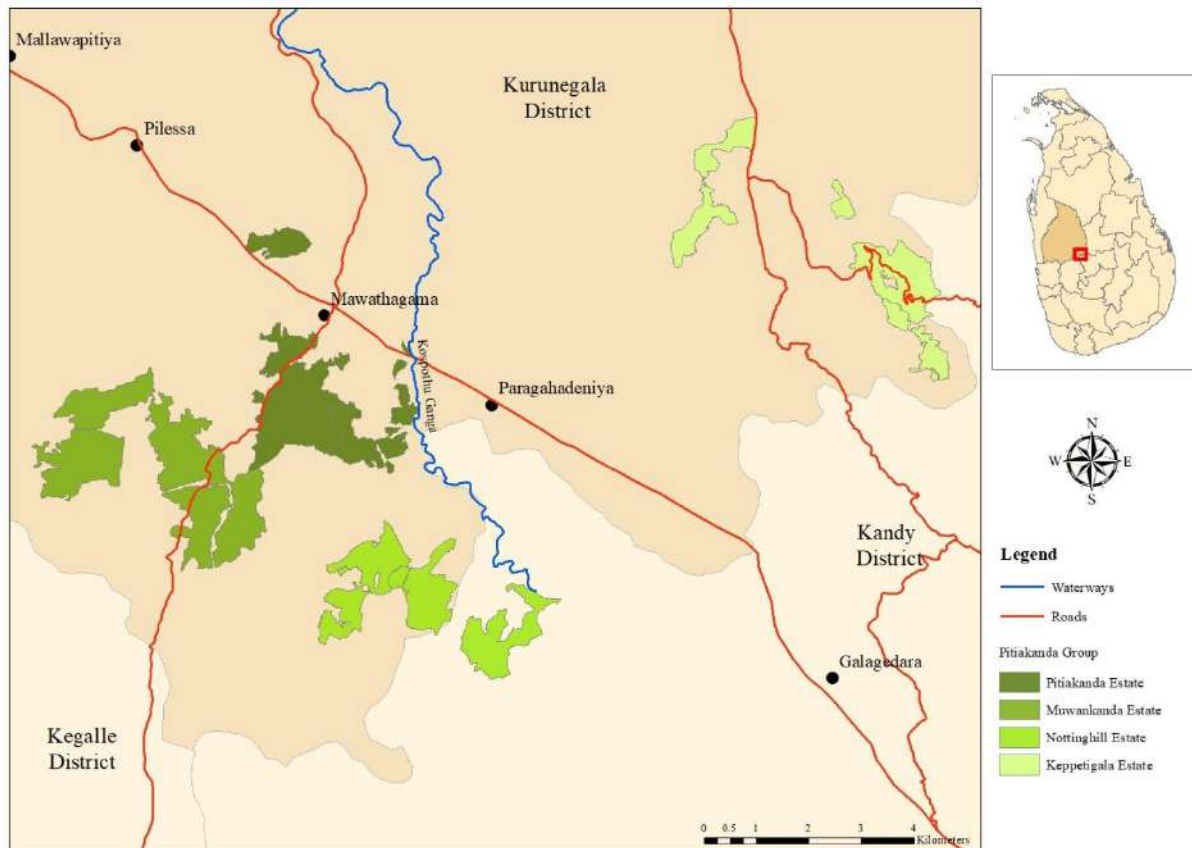


Figure 1: Distribution of Pitiakanda group of estates.

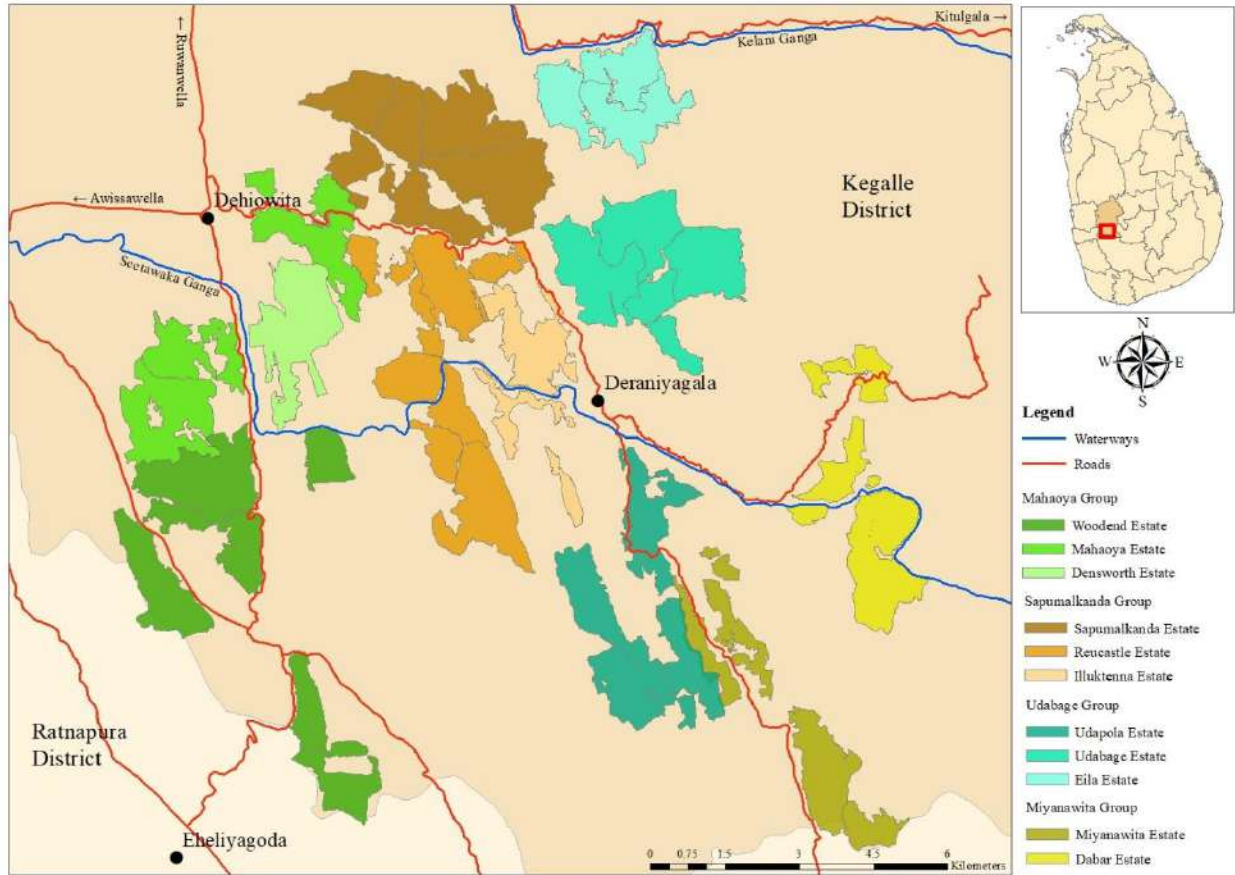


Figure 2: Distribution of Sapumalkanda, Udabage, Mahaoya and Miyanawita groups of estates.

The landscape where the fifteen estates of Lalan Rubbers Pvt. Ltd. is located primarily in the lower and mid elevations of the wet zone of Sri Lanka. Pitiakanda group of estates is located near the northern boundary of the wet zone and some estates are located in the intermediate zone. The primary natural ecosystems in the landscape includes, lowland wet evergreen forests, marshes, rivers, streams and springs. The Pitiakanda group of estates are located mainly in the Deduru Oya River Basin while the Deraniyagala plantation groups are in the Kelani River Basin. The Seetawaka Ganga, a major tributary to the River Kelani, and its tributaries flows across several estates in the Deraniyagala groups of estates.

The habitats in the plantations are governed by the climatic and elevation features, and the management objectives of the plantation. Primary plantation habitats in the estates include rubber, oil palm, coconut, tea, cinnamon, several species of timber and other minor crops. Depending on the nature of the species and the age of the crop, these fields have different vegetation structures. The natural habitat patches in the plantations are scattered in between the crops. Most of the remaining forest patches are located in upper elevations and

hillocks while the marshy habitats are found in the low-lying areas. The stream network originates from the hills and flows along the elevation gradient and contributes to the larger rivers, providing a linear habitat feature and improving connectivity within the habitat mosaic in the plantation landscape. Some rare and isolated habitats such as forest caves were also observed in the Lalan Rubbers plantations.

Lalan Rubber has so far conducted three environmental assessments of their estates in 2010, 2012 and 2016 as per the requirements of FSC specified standards. Based on the recommendations provided by these assessments the company has taken number of management initiatives to minimize the impact of the plantation activities on the managed and natural environment within these estates. As per the company policy, Lalan Rubber Pvt Ltd intends to commission an environmental assessment for the 2020/21 to evaluate the present status of the environment in relation to the data recorded in permanent sampling plots established during the previous assessments. In addition, the company has identified High Conservation Values located inside the said estates with the consultation of local stakeholders and the commissioned study is expected to support this assessment using the data generated during the proposed assessment.



Conservation forests with relatively less disturbed lowland forest habitat
Woodened Estate



Conservation forest areas with a secondary forest growth
Udapola Estate



Fast flowing streams with rocks and boulders
Illuktenna Estate



Slow flowing lowland streams with a substrate of pebbles, sand and silt
Mahaoya Estate



Underwater habitat in a stream with sand, pebbles and cobbles in the substrate
Udapola Estate.



Underwater habitat in a stream with silt and leaf litter in the substrate
Udapola Estate



Lowland marsh areas
Udapola Estate



Cave habitat
Eila Estate



Mature rubber field
Woodend Estate



Rubber replanting field
Pitiakanda Estate



Oil palm field
Woodend Estate



Coconut field
Woodend Estate



Tea plantation area
Woodend Estate



Cinnamon field
Illuktenna Estate



Plantation landscape in the Deraniyagala area: Fields of oil palm, rubber, scattered home garden habitats with small, wooded patches and forest areas in Sapumalkanda Estate.

1.4 Objectives of the Study

The overall objective of the study is to conduct an environmental assessment of the five groups of estates specified above managed by Lalan Rubber and identify specific mitigation measures that are required to ensure that the impact on ecological resources are avoided, minimized or adequately compensated. The specific objectives include:

1. Document the fauna and flora present in the permanent sampling points (PSPs) established under the previous surveys using the same sampling methodology, which will be improved further if necessary, retaining the salient features of the sampling methodology that will enable
 - a. Meaningful comparison of data generated with previous study to draw conclusions about the management effectiveness
 - b. Identify whether there are any significant changes in the species assemblage at each site and if so to determine whether the change is positive or negative and also identify possible drivers that may have contributed to the identified change.
2. Determine the environmental values and ecosystem services provided by the managed and natural habitats present in the five groups
3. Evaluate already determined High Conservation Values (HCVs) of the estates and identify any new HCVs based on the findings of the study
4. Determine whether the habitats present in the estates serve as critical habitats¹ and if so, provide recommendations to effectively manage these habitats
5. Develop field level monitoring and conservation plans for critical species² critical habitats or high conservation values identified within the managed and natural habitats present in the five groups

1 A Critical Habitat is an area that has high biodiversity value and may include sites that are legally protected or officially proposed for protection (e.g. areas that meet the International Union for Conservation of Nature (IUCN) classification criteria, the Ramsar List of Wetlands of International Importance, and United Nations Educational, Scientific, and Cultural Organization (UNESCO) world natural heritage sites. Critical habitat includes: habitat required for the survival of critically endangered or endangered species; areas with special significance for endemic or restricted-range species; sites that are critical for the survival of migratory species; areas supporting globally significant concentrations or numbers of individuals of congregatory species; areas with unique assemblages of species that are associated with key evolutionary processes or provide key ecosystem services; areas with biodiversity that has significant social, cultural or economic importance to local communities

2 Critical species include species that are listed as endemic, threatened or restricted to a specific region in Sri Lanka

6. Provide training to executives and employees of the estate on monitoring and conservation of critical elements of the biodiversity within their group
7. Share findings of the study with the local staff as well as head office staff both verbally and as formal reports as specified in the Terms of Reference

The objective of this report is to share the findings of the assessment carried out to document the status and progressive improvements of the biodiversity resources within the fifteen estates managed by Lalan Rubbers Pvt. Limited as well as the measures implemented by the company to ensure conservation of these biodiversity resources to inform the FSC assessment.

2. Methodological approach

2.1 Study locations: Altogether, 168 sampling sites were surveyed including the 83 permanent sampling plots (PSPs are 20m x 20m sampling plots established during the previous biodiversity assessments in managed and natural habitats within the five groups). New PSPs were established where appropriate in natural forest patches of the estates and in other different fields of rubber, tea, coconut, oil palm, cinnamon and timber. A summary of locations sampled in each of the 15 estates are given in Table 1 and the detailed list of sampling points along with the GPS coordinates and elevation are given in Annex 1.

Table 1. The number of sites sampled within the 15 estates

Group	Estate	Division	Sampling Sites	PSPs
Pitiakanda	Pitiakanda	Pitiakanda	6	5
		Pilessa	1	
	Nottinghill	Dee Ella	6	4
		Nottinghill	3	2
	Muwankanda	Upper	7	2
		Moratenna	2	2
		Lower	3	3
	Keppetigala	Galagama	3	2
Malabe		4	2	
Sapumalkanda	Sapumalkanda	Walpola	5	3
		Sapumalkanda Upper	6	2
		Clunes Upper	3	2
	Reucastle	Nahelma	4	2
		Reucastle	9	3
		Digala Upper	1	1
		Digala Lower	3	
	Illukthenna	Udahenkanda	1	
Illukthenna		7	6	
Udabage	Udabage	Lower	4	2
		Middle	2	1
		Upper	3	1
	Eila	Avington	2	1
		Malhasna	4	2
		Eila	5	2
	Udapola	Udapola	6	1
		Yatapola	7	
Mawaththanne		7	2	
Mannikkanda		5	2	

Group	Estate	Division	Sampling Sites	PSPs
Miyanawita	Dabar	Dabar	4	3
		Panakura	1	1
	Miyanawita	Kosgahakanda	5	3
		Asamanakanda	2	
		East	3	1
Mahaoya	Woodend	Nugahena	5	5
		Thalapitiya	1	1
		Rangegama	1	
		Woodend	3	1
		Yogama	4	2
	Mahaoya	Mahaoya	6	4
		Ernen	4	2
		Glasel	3	
	Densworth	Densworth	7	5

2.2 Study Period: This study was undertaken in July 2021 and will be completed in January 2022 covering wet season and dry season as well as migratory and non-migratory seasons of birds enabling the capture of seasonal variations.

2.3 Personnel involved: The study team comprised of Prof. Devaka Weerakoon (Team Leader), Ms. Sonali Herath and the field study team consisting of five research Assistants (specializing in flora and fauna). The list of key persons involved, and their role is mentioned in the Table 2 below.

Table 2: The study team

Name of officer	Designation	Work Assigned
Prof. Devaka Weerakoon	Team leader	Overall guidance, selection of sampling methodology, supervision of field data collection, data analysis, developing mitigation measures, report preparation and sharing the findings of the study with relevant stakeholders
Ms Dilani Rachithra	GIS specialist	Preparation of maps of the study sites using available satellite images, landuse maps and shape files provided by the client to help the study team to plan the sampling methodology. Using the information gathered by the study team prepare final set of maps of the study sites indicating

		habitats present, critical habitats, and specific mitigation measures proposed based on the findings of the study.
Mr. Himesh Jayasinghe	Plant ecology	Identification and documenting the habitats present in the PSPs, documenting the plant species present in each PSP, listing the identified plant species in to endemic, threatened, range restricted or invasive according to national and global lists and assisting the team leader to identify possible mitigation measures
Mr. Nuwan Jayawardene		
Mr. Amila Sumanapala (Field Team leader)	Animal Ecology	Identification and documenting the dragonflies, butterflies fish, amphibians, reptiles, birds and mammal present in each PSP identified, listing the identified species into endemic, threatened or range restricted according to latest national and global lists and assisting the team leader to identify possible mitigation measures
Mr. Ruvinda De Mel		
Mr. Tharindu Ranasinghe		

2.4 Study techniques

Task 1. Desk studies: Results of the three previous studies (Nissanka, 2012 and Nissanka, 2016) were compiled to establish the patterns and trends of change as well as to inform the study team about the baseline conditions that exist in the study area as well as specific study sites and areas that needs to be given special attention during the field investigations.

Task 2 Field investigations: Field studies were carried out to document the flora and fauna found in each of the PSPs, their abundance and movement patterns of fauna around the study area. This will provide a clear understanding of the spatial and temporal distribution patterns of fauna and flora as well as provide the basis to identify any changes in the faunal and floral assemblage. Further, field study will also attempt to collect data during the migrant season as well as day and nighttime to capture temporal variations in animal usage of the site. This task will involve three steps.

Step 1 Documenting the spatial and temporal distribution patterns of fauna and flora: Mainly the plot sampling method was used for this purpose. Measurements were taken from all the permanent sampling plots (each with 20 m x 20 m land area) representing all estates.

Flora: GPS coordinates were recorded at the middle of the PSP. All the plant species present inside the PSP was recorded. Woody perennials having above 6cm girth (at breast height [1.3

m from the tree base]) were used to measure stem girth and total plant height values. Measuring tape was used for girth measurements and clinometer was used for tree height measurements. Total of 5 sub plots (each with 4 m x 4 m land area) were established at four corners (4) and one in the middle (1) of the each PSP and all plant species number and density inside these sub-plots were counted and identified.

Fauna: Visual encounter survey method was used in preparing the checklist of fauna. Faunal survey focused on two invertebrate taxa (butterflies and dragonflies) and five vertebrate taxa (freshwater fish, amphibians, reptiles, birds and mammals). In addition, other invertebrates observed, especially land snails and spiders, were recorded opportunistically. Within each PSP all the faunal species observed belonging to the seven focal taxa were recorded. In addition, species observed outside the PSPs were recorded opportunistically. Surveys were conducted during daytime and sites that support high diversity were also sampled at night to capture nocturnal species. At each sampling plot the number of species observed and number of individuals observed per species were recorded.

For the purpose of documenting fauna both direct observations made during the field survey and indirect evidence collected such as presence of nests, footprints, scat, body parts etc. were taken into account. In addition, data collected through opportunistic observations was also used to enrich the data gathered using the plot sampling method. Information gathered from local community members and field staff on flora and fauna they have observed was also gathered. The information provided were further verified by getting them to confirm what they saw by presenting them a photo catalogue where required. A list of personnel interviewed is provided in annexure.

The different species of vertebrates and invertebrates were identified and classified by using latest field guides and literature. The threat status was determined according to the latest national and global red lists.

All the data collected were tabulated and analyses were carried out using standard analytical procedures identified for ecological studies. The fauna and flora present in each of the PSPs were documented. This would allow generation of site and habitat specific data as well as establish the *status quo*, which will be used for comparison with previous studies.

Step 2 Determination of distribution and threat status of fauna and flora: A list of fauna and flora recorded was compiled and their distribution status (native, endemic, range

restricted, exotic or invasive) and threat status (both national and global) was listed according to the latest compiled national and global listings.

Step 3 Documenting animal movement or dispersion patterns: Three main methods were used for this purpose. This includes direct observations made during the field survey; use of indirect evidence such as presence of footprints, scat, body parts etc., that can be used as an indication of a use of an area as a passageway by animals and consultation of local community members regarding movement patterns of animals.

Task 3 Data Analysis: Based on the information gathered during the field study a preliminary analysis was carried out to

1. Identify whether there are any significant changes in the species assemblage at each site and if so to determine whether the change is positive or negative and also identify possible drivers that may have contributed to the identified change.
2. Evaluate already determined High Conservation Values (HCVs) of the estates and identify any new HCVs based on the findings of the study.
3. Determine whether the habitats present in the estates serve as critical habitats and if so, provide recommendations to effectively manage these habitats.
4. Identify and develop field level monitoring and conservation plans for critical species critical habitats or high conservation values identified within the managed and natural habitats present in the five groups.
5. Identify training needs to executives of the estate on monitoring and conservation of critical elements of the biodiversity within their group.
6. Determine the environmental values and ecosystem services provided by the managed and natural habitats present in the five groups.

Task 4 Developing mitigation measures: Based on the above task, specific mitigation measures are recommended using the mitigation hierarchy, *viz.*, avoid, minimize, restore, rehabilitate or offset.

Task 5 Preparation and Submission of the Environment Assessment Report: The final output of the study is the preparation of the Environment Assessment Report guided by the ToR and other stakeholders. This task will involve two steps.

Step 1. The draft Environment Assessment Report will be presented to the client first so that the client can go through the report and ensure that the report complies to the required

standards specified in the ToR and the client is in agreement with the facts presented in the report, especially mitigatory measures the client shall have to undertake.

Step 2. The client's concerns will be addressed, and the final report will be presented to client and other stakeholders

Task 6 Incorporation of the proposed mitigation measures into the Estate Management Plans: This is a crucial task that will ensure inclusion of the proposed mitigation measures and monitoring needs arising from the Environment Assessment into the regular operational plans of the estate so that mitigation measures and monitoring needs can be implemented on a site-specific and timely manner. The plan will provide detailed activities that needs to be carried out, where these activities should be carried out, how the activity should be monitored so that adaptive changes can be introduced to maximize benefits and the cost of each activity and how these activities should be financed.

3. Key Findings of the Biodiversity Assessment

3.1 Overall biodiversity of the 15 estates assessed

Based on the results of the assessments conducted in the 15 estates 566 species of plants (248 during 2016) and 363 species of animals (251 during 2016) were recorded. This included 127 species of endemic fauna, 80 species of endemic flora, 94 species of threatened fauna and 78 species of threatened flora. A summary of the species recorded under different taxonomic groups during the last biodiversity assessment and the present assessment are presented in tables 3 and 4 respectively. The detailed list of plants and animals observed during this study including their distribution and threat status is given in Annex 2a and 2b.

It should be noted that some of the taxa assessed during the 2012 and 2016 assessment such as ferns, mosses and lichens (only in the 2016 assessment) were not included in the present assessment while land snails (2012 and present assessment), spiders (the present study) were assessed only based on opportunistic observations. Eight main taxa, *viz.*, dragonflies, butterflies, freshwater fish, amphibians, reptiles, birds, mammals and flowering plants were commonly considered in both the 2016 and present assessment.

Table 3. Summary of the total fauna and flora recorded during the 2016 assessment.

Abbreviations used: **CR** - Critically Endangered; **EN** - Endangered; **VU** - Vulnerable, **NT** - Near Threatened. *the four bird species listed under the exotic category are migrant species.

Taxa	Total Species	Endemic Species	Exotic Species	National Conservation Status			
				CR	EN	VU	NT
Dragonflies	20	8	-	-	-	3	4
Butterflies	73	5	-	1	2	6	6
Freshwater Fish	11	8	-	-	1	4	2
Amphibians	20	16	-	-	2	7	4
Reptiles	26	13	-	1	-	4	2
Birds	86	18	4*	-	-	3	3
Mammals	15	2	-	-	2	-	3
Sub-Total (Fauna)	255	73	5	2	8	29	24
Plants	248	37	52	1	2	14	-
Ferns	40	3	-	-	-	-	-
Mosses	8	-	-	-	-	-	-
Lichens	58	-	-	-	-	-	-
Sub-Total (Flora)	354	40	52	1	2	14	-
Total (Species)	609	113	57	3	10	43	-

Table 4. Summary of the total fauna and flora recorded during the current assessment carried out in 2021/2022.

Abbreviations used: **CR** - Critically Endangered; **DD** - Data Deficient; **EN** - Endangered; **NT** - Near Threatened; **VU** - Vulnerable; * the nine bird species listed under the exotic category are migrant species.

Taxa	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Landsnails*	18	10	2	2	1	6	1	-
Spiders*	58	10	-	2	3	-	-	4
Dragonflies	58	26	-	1	4	18	11	-
Butterflies	112	10	1	2	4	13	11	-
Freshwater Fish	34	17	1	1	5	7	5	-
Amphibians	21	16	-	-	2	7	5	-
Reptiles	32	17	-	-	1	5	2	1
Birds	108	17	9*	-	1	3	9	-
Mammals	22	4	-	-	3	3	2	-
Sub-Total (Fauna)	463	127	13	8	24	62	46	5
Plants	566	80	159	6	15	57	43	5
Total (Species)	1029	207	172	14	39	119	89	10

Note: The threat status of the plants has been recently updated. The threat status of the last report has been based on the Red List published in 2012. Thus, between then and now the status of species have changed and therefore these numbers are no longer comparable. However, in annex 1 threat status of the 2016 list has been updated according to 2020 Red List to enable a comparison of the two assessments.

* Both land snails and spiders were assessed only based on opportunistic observations and thus not included in further estate level analysis.

A comparison of the overall biodiversity recorded in the 15 estates assessed is given in table 5. Compared to the four groups located in the Kegalle district (wet sub montane zone), the overall biodiversity in the Pitiakanda group located in Kurunegala district (lowland intermediate zone) was relatively low in terms of species richness and the number of endemic and threatened species present. Out of the four groups in the Kegalle district, the highest overall biodiversity was recorded in the Sapumalkanda Group followed by Udabage Group, Mahaoya Group and Miynawita group. Out of the 15 estates the highest species richness was recorded in Udapola (377), followed by Reucastle (360), Mahaoya (337),

Sapumalkanda (326) and Miyanawita (304) where more than 300 species were recorded. However, in terms of critical species (endemic and threatened species) the highest richness was recorded in Reucastle (72 endemic and 48 threatened species), followed by Miyanawita (68 endemic and 43 threatened species), Udupola (62 endemic and 40 threatened species), Maha oya (63 endemic and 38 threatened species), Woodened (64 endemic and 37 threatened species) and Sapumalkanda (56 endemic and 31 threatened species).

With respect to fauna, Udupola estate had the highest species richness (184) followed by Reucastle (175), Sapumalkanda (164), Woodend (162), Mahaoya (143), Miyanawita (131). With respect to flora, Udupola estate had the highest species richness (195) followed by Mahaoya (193), Reucastle (185), Miyanawita (173), Sapumalkanda (162) and Woodend (134).

Table 5. Comparison of the total fauna and flora recorded in each of the 15 estates considered in the current assessment.

Abbreviations used: **CR** - Critically Endangered; **DD** - Data Deficient; **EN** - Endangered; **NT** - Near Threatened; **VU** - Vulnerable.

Name of Estate	Taxa	Total Species	Endemic Species	Exotic Species	National Conservation Status				
					CR	EN	VU	NT	DD
1. Sapumalkanda Group									
Ilukthenna	Fauna	110	24	0	0	1	5	14	0
	Flora	117	7	45	-	1	7	2	3
	Total	227	31	45	0	2	12	16	3
Reucastle	Fauna	175	40	0	0	6	21	22	0
	Flora	185	31	55	2	2	16	11	3
	Total	360	72	55	2	9	37	33	3
Sapumalkanda	Fauna	164	40	1	1	3	12	20	1
	Flora	162	13	64	1	2	12	5	1
	Total	326	53	65	2	5	24	25	2
2. Mahaoya Group									
Woodend	Fauna	162	50	0	2	4	18	22	0
	Flora	134	14	45	1	3	9	4	2
	Total	296	64	45	3	7	27	26	2
Densworth	Fauna	105	27	6*	1	6	8	5	0
	Flora	101	7	36	1	-	6	3	1
	Total	206	34	37	2	6	14	8	1

Name of Estate	Taxa	Total Species	Endemic Species	Exotic Species	National Conservation Status				
					CR	EN	VU	NT	DD
Mahaoya	Fauna	143	34	6*	1	5	13	11	0
	Flora	194	29	49	2	3	14	15	2
	Total	337	63	49	3	8	27	26	2
3. Udabage Group									
Udabage	Fauna	123	31	0	0	5	11	20	0
	Flora	103	14	36	-	2	6	4	2
	Total	225	43	35	0	7	17	24	2
Eila	Fauna	119	31	0		1	13	15	0
	Flora	119	21	38	1	2	11	4	2
	Total	238	52	38	1	3	24	19	2
Udapola	Fauna	182	45	0	1	6	17	24	1
	Flora	195	17	68	-	2	14	9	2
	Total	377	62	68	1	8	31	33	3
4. Miyanawita Group									
Miyanawita	Fauna	131	43	0	0	5	14	17	1
	Flora	173	25	58	2	4	18	10	1
	Total	304	68	58	2	9	32	27	2
Dabar	Fauna	94	25	1	1	0	12	11	0
	Flora	81	13	27	-	-	6	4	1
	Total	175	38	28	1	0	18	15	1
5. Pitiakanda Group									
Muwankanda	Fauna	140	36	2	0	1	6	20	0
	Flora	134	5	37	-	-	5	2	2
	Total	274	41	39	0	1	11	22	2
Pitiakanda	Fauna	97	18	0	0	1	2	6	0
	Flora	124	2	33	-	1	6	3	1
	Total	221	20	33	0	2	8	9	1
Nottinghill	Fauna	104	18	0	0	3	3	8	0
	Flora	122	5	32	0	0	3	6	1
	Total	226	22	32	0	2	6	14	1
Keppetigala	Fauna	106	24	0	0	1	5	12	1
	Flora	121	7	35	-	2	6	3	2
	Total	227	31	35	0	3	11	15	3

3.2 Overview of the Taxonomic groups assessed

Land snails: Land snails were studied during the 2012 assessment and the present assessment. Altogether 4 species including 3 endemic species (*Ratnadvipia irradians*, *Cryptozona chenui* and *Oligospira poleii*) one alien invasive species *Lissacahtina fulica* (Giant African snail) was recorded in 2012. The present assessment studied landsnails only based on opportunistic observations and reports 18 species of which 14 are identified to the species level. A comparison of land snails observed during the previous assessments and the present assessment is presented in Table 6.

Table 6. Summary of the land snails recorded during the current assessment carried out in 2021/2022 and the two previous assessments carried out in 2012 and 2016. **Abbreviations used:** **CR** - Critically Endangered; **DD** - Data Deficient; **EN** - Endangered; **NT** - Near Threatened; **VU** - Vulnerable.

Assessment Year	Total Species	Endemic Species	Exotic Species	National Conservation Status				
				CR	EN	VU	NT	DD
2012	4	2	1	-	1	1	-	-
2016	NE	-	-	-	-	-	-	-
2021	18	10	2	2	1	6	1	-

Ten out of the 18 identified species are endemic and the four undetermined morphospecies also probably represents endemics. Two Critically Endangered species namely, *Ratnadvipia karui* and *Satiella mebranacea* were observed at the Conservation Forest in the Sapumalkanda Estate. In addition to *Lissachatina fulica*, the introduced pest species *Mariaella dussumieri* was also observed commonly in many estates.

Spiders: The two previous biodiversity assessments conducted in the plantations of Lalan Rubbers Pvt. Ltd. have not assessed the diversity of the spiders. The present assessment studied the spider fauna based on opportunistic observations compiled during the field surveys. Data were not collected specifically at site level. This preliminary assessment resulted in recording 58 species of spiders. Due to limitations in determining species identification based on field observations, only 24 of the observed species were identified to the species level. Of the identified species, 10 are endemic and 5 are nationally threatened.

Table 7. Summary of the spiders recorded during the current assessment carried out in 2021/2022 and the two previous assessments carried out in 2012 and 2016. **Abbreviations**

used: **CR** - Critically Endangered; **DD** - Data Deficient; **EN** - Endangered; **NT** - Near Threatened; **VU** - Vulnerable.

Assessment Year	Total Species	Endemic Species	Exotic Species	National Conservation Status				
				CR	EN	VU	NT	DD
2012	NE	-	-	-	-	-	-	-
2016	NE	-	-	-	-	-	-	-
2021	58	10	-	2	3	-	-	4

Dragonflies: During the 2012 assessment dragonflies were not considered. During the 2016 assessment 20 species were recorded including eight endemic species and three threatened species. During the present assessment 58 species were recorded including 26 endemic species and 23 threatened species. The most noteworthy species record during the present assessment include *Macromia flinti* (Flint’s Cruiser), which was observed in the riverine habitat at Dabar Estate. A comparison of dragonflies observed during the 2016 assessment and the present assessment is presented in Table 8. One species recorded during the 2016 assessment, *Lathrecista asiatica* (Pruinosed Bloodtail) was not observed in the present assessment. However, 39 new species were recorded during the current assessment.

Table 8. Summary of the dragonflies recorded during the current assessment carried out in 2021/2022 and the two previous assessments carried out in 2012 and 2016. **Abbreviations used:** **CR** - Critically Endangered; **DD** - Data Deficient; **EN** - Endangered; **NT** - Near Threatened; **VU** - Vulnerable.

Assessment Year	Total Species	Endemic Species	Exotic Species	National Conservation Status				
				CR	EN	VU	NT	DD
2012	NE	-	-	-	-	-	-	-
2016	20	8	-	-	-	3	4	-
2021	58	26	-	1	4	18	11	-

When considering the overall species richness, the two estates Woodend and Udapola had the highest species richness as well as number of critical species (endemic and threatened species), followed by Sapumalkanda, Reucastle and Muwankanda all of which had 20 or more species (see table 9). Presence of critically endangered *Macromia flinti* (Flint’s Cruiser) in the stream ecosystem of the Dabar estate is one of the noteworthy findings and this species can be used as the flagship species for the Dabar estate. Among the estates in the Kurunegala district, the highest species richness and the highest number of critical species was recorded

in the Muwankanda estate. Therefore, protecting dragonflies and their habitats can be a key conservation objective for the Muwankanda estate in the Kurunegala district and Udapola estate in the Kegalle district.

Table 9. Comparison of the dragonflies recorded in each of the 15 estates considered in the current assessment.

Abbreviations used: **CR** - Critically Endangered; **DD** - Data Deficient; **EN** - Endangered; **NT** - Near Threatened; **VU** - Vulnerable.

Name of Estate	Total Species	Endemic Species	Exotic Species	National Conservation Status				
				CR	EN	VU	NT	DD
Illukthenna	14	5	-	-	-	-	5	-
Reucastle	20	5	-	-	1	5	4	-
Sapumalkanda	22	9	-	-	1	3	6	-
Woodend	28	13	-	-	1	8	9	-
Densworth	9	3	-	-	-	1	-	-
Mahaoya	16	7	-	-	-	4	1	-
Udabage	18	8	-	-	2	3	4	-
Eila	18	9	-	-	-	6	5	-
Udapola	27	14	-	-	2	7	6	-
Miyanawita	11	7	-	-	-	3	3	-
Dabar	12	6	-	1	-	5	1	-
Muwankanda	20	8	-	-	1	3	6	-
Pitiakanda	11	4	-	-	-	1	3	-
Notinghill	12	5	-	-	-	2	3	-
Keppetigala	10	5	-	-	1	2	2	-

Butterflies: Butterflies were considered in all three assessments. A comparison of butterflies observed during the previous assessments and the present assessment is presented in Table 10.

Table 10. Summary of the butterflies recorded during the current assessment carried out in 2021/2022 and the two previous assessments carried out in 2012 and 2016. **Abbreviations used:** **CR** - Critically Endangered; **DD** - Data Deficient; **EN** - Endangered; **NT** - Near Threatened; **VU** - Vulnerable.

Assessment Year	Total Species	Endemic Species	Exotic Species	National Conservation Status (2012)				
				CR	EN	VU	NT	DD
2012	39	4	-	1	1	-	-	-
2016	73	5	-	1	2	6	6	-
2021	104	10	1	2	4	13	11	-

During the 2012 assessment 39 species were recorded including four endemic species and two threatened species. Two endemic species recorded during 2012 assessment *Pathysa antiphates* (Five-bar Swordtail) and *Tarucus nara* (Striped Pierrot) listed as critically endangered and endangered respectively were not recorded in either 2016 or present assessment.

During the 2016 assessment 73 species were recorded including five endemic species and nine threatened species. Further, 10 species including three endemic species, *Pachliopta jophon* (Sri Lanka Rose), *Parantica taprobana* (Sri Lanka Tiger), *Jamides lacteata* (Sri Lanka Milky Cerulean) and five native species *Appias albina* (Common Albatross), *Charaxes bharata* (Indian Nawab), *Tajuria cippus* (Peacock Royal), *Borbo cinnara* (Wallace's Swift), and *Amblypodia anita* (Purple leaf blue) recorded during the 2016 assessment was not observed in the present assessment.

During the present assessment 104 species were recorded including 10 endemic species and 19 threatened species. Further, one introduced species *Erionota torus* (Rounded Palm Red Eye) was also recorded. Altogether, 33 new species were recorded during the current survey. This includes two endemic species, *Baoris penicillata* (Sri Lankan Paint Brush Swift) and *Halpe ceylonica* (Sri Lanka Ace) listed as critically endangered and endangered respectively.

When considering the overall species richness, Reucastle had the highest species richness as well as number of critical species (endemic and threatened species), followed by Udapola, Sapumalkanda, and Udabage, all of which had 40 or more species (see table 11). At least one of the two critically endangered species, *Baoris penicillata* (Sri Lankan Paint Brush Swift) and *Catochrysops panormus* (Silver Forget-me-not) was recorded in all three estates within the Mahaoya group. Therefore, these species can serve as the flagship species for the Mahaoya group.

Table 11. Comparison of the butterflies recorded in each of the 15 estates considered in the current assessment.

Abbreviations used: CR - Critically Endangered; DD - Data Deficient; EN - Endangered; NT - Near Threatened; VU – Vulnerable; Sapumalkanda, Mahaoya, Udabage, Miyanawita and Pitiakanda.

Name of Estate	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Illukthenna	28	2	-	-	-	2	2	-
Reucastle	53	4	-	-	-	7	4	-
Sapumalkanda	44	3	1	1	-	2	3	-
Woodend	37	3	-	2	-	1	2	-
Densworth	24	2	-	1	-	1	1	-
Mahaoya	33	1	-	1	1	-	-	-
Udabage	40	3	-	-	1	2	5	-
Eila	29	3	-	-	-	2	2	-
Udapola	45	5	-	-	-	2	5	-
Miyanawita	30	2	-	-	-	2	3	-
Dabar	29	4	1	-	-	3	3	-
Muwankanda	36	4	2	-	-	1	4	-
Pitiakanda	28	1	-	-	-	-	1	-
Notinghill	31	3	-	-	1	-	2	-
Keppetigala	36	3	-	-	-	-	2	-

Freshwater Fish: Freshwater fish were considered in all three assessments. A comparison of freshwater fish observed during the previous assessments and the present assessment is presented in Table 12.

Table 12. Summary of the freshwater fish recorded during the current assessment carried out in 2021/2022 and the two previous assessments carried out in 2012 and 2016.

Abbreviations used: CR - Critically Endangered; DD - Data Deficient; EN - Endangered; NT - Near Threatened; VU - Vulnerable.

Assessment Year	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
2012	15	8	-	-	-	3	-	-
2016	11	8	-	-	1	4	2	-
2021	33	17	-	1	5	7	5	-

During the 2012 assessment 15 species were recorded including eight endemic species and three threatened species. During the 2016 assessment 11 species were recorded including eight endemic species and five threatened species.

During the present assessment 33 species were recorded including 17 endemic species and 13 threatened species. Altogether 22 new species have been recorded during the current survey including 11 endemic species. The new species recorded included one critically endangered endemic species *Systemus asoka* (Asoka Barb), which is restricted to the Upper basin of Kelani river. These 11 new endemic species recorded included four species that are listed as Nationally Endangered, and 2 species listed as Nationally Vulnerable. All eight endemic species recorded during 2012 and 2016 assessments were also recorded during the present assessment. However, one of these species *Dawkinsia filamentosa* (Sri Lanka Filamented Barb) is no longer considered as a valid endemic species. The conservation status of species is not comparable across assessments as the two previous assessments were based on 2012 Red List while the current assessment used the latest Red List published for freshwater fish of Sri Lanka.

When considering the overall species richness, Woodend had the highest species richness as well as number of critical species (endemic and threatened species), followed by Mahaoya, Densworth and Reucastle (see table 13). The overall freshwater diversity in the Mahaoya group was relatively higher than the other four groups and therefore, one of the key conservation objectives for the Mahaoya group can be conservation of freshwater fish. Presence of critically endangered endemic species *Systemus asoka* (Asoka Barb) at the Udapola estate was another noteworthy observation and this species should be one of the key conservation targets in the Udapola estate.

Table 13. Comparison of the freshwater fish recorded in each of the 15 estates considered in the current assessment.

Abbreviations used: **CR** - Critically Endangered; **DD** - Data Deficient; **EN** - Endangered; **NT** - Near Threatened; **VU** - Vulnerable; Sapumalkanda, Mahaoya, Udabage, Miyanawita and Pitiakanda.

Name of Estate	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Illukthenna	1	-	-	-	-	-	1	-
Reucastle	17	7	-	-	2	2	4	-
Sapumalkanda	9	4	-	-	-	1	4	-

Woodend	21	10	-	-	3	4	3	-
Densworth	17	10	-	-	4	4	3	-
Mahaoya	19	10	-	-	3	4	3	-
Udabage	7	4	-	-	-	2	3	-
Eila	4	2	-	-	-	-	3	-
Udapola	15	7	-	1	-	5	3	-
Miyanawita	7	5	-	-	-	3	2	-
Dabar	9	3	-	-	-	2	2	-
Muwankanda	9	2	-	-	-	-	3	-
Pitiakanda	5	0	-	-	-	-	1	-
Notinghill	5	0	-	-	-	-	1	-
Keppetigala	2	1	-	-	-	-	2	-

Amphibians: Amphibians were considered in all three assessments. A comparison of amphibians observed during the previous assessments and the present assessment is presented in Table 14.

Table 14. Summary of the amphibians recorded during the current assessment carried out in 2021/2022 and the two previous assessments carried out in 2012 and 2016.

Abbreviations used: **CR** - Critically Endangered; **DD** - Data Deficient; **EN** - Endangered; **NT** - Near Threatened; **VU** - Vulnerable.

Assessment Year	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
2012	6	3				4	1	
2016	20	16			2	7	4	
2021	21	16			2	7	5	

During the 2012 assessment six species were recorded including three endemic species and four threatened species. During the 2016 assessment 20 species were recorded including 16 endemic species and nine threatened species. One endemic species recorded during 2012 and 2016 assessments *Adenomus kelaartii* (Kelaart's dwarf toad) was not recorded in the present assessment. Further, six other species recorded in the 2016 assessment including five endemic species, *Uperodon obscura* (Obscure ramanella), *Pseudophilautus fergusonianus* (Ferguson's shrub frog), *Pseudophilautus pleurotaenia* (Side-striped shrub frog), *Pseudophilautus limbus* (Haycock shrub frog), *Pseudophilautus reticulatus* (Reticulated thigh

shrub frog) and one native species *Polypedates maculatus* (Spotted tree frog) was not observed in the present assessment.

During the present assessment 21 species were recorded including 16 endemic species and nine threatened species. Altogether eight new species have been recorded during the current survey including seven endemic species.

The amphibian diversity was found to be highest in the Sapumalkanda group in the Kegalle district and the highest species richness and highest number of critical species (endemic and threatened species) were recorded in the Reucastle and Sapumalkanda estates (see table 15). Among the four estates in the Kurunegala district the highest species richness and highest number of critical species was recorded in the Muwankanda estate and therefore, conservation of amphibians should be one of the key conservation targets for Muwankanda estate.

Table 15. Comparison of the amphibians recorded in each of the 15 estates considered in the current assessment.

Abbreviations used: **CR** - Critically Endangered; **DD** - Data Deficient; **EN** - Endangered; **NT** - Near Threatened; **VU** - Vulnerable; Sapumalkanda, Mahaoya, Udabage, Miyanawita and Pitiakanda.

Name of Estate	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Illukthenna	5	4	-	-	-	2	2	-
Reucastle	10	7	-	-	-	3	3	-
Sapumalkanda	10	7	-	-	-	3	3	-
Woodend	5	4	-	-	-	2	2	-
Densworth	1	-	-	-	-	-	-	-
Mahaoya	6	6	-	-	-	4	2	-
Udabage	7	5	-	-	-	2	3	-
Eila	6	5	-	-	-	2	2	-
Udapola	9	5	-	-	-	2	3	-
Miyanawita	9	9	-	-	2	3	4	-
Dabar	3	3	-	-	-	1	1	-
Muwankanda	4	4	-	-	-	1	2	-
Pitiakanda	1	1	-	-	-	1	-	-
Notinghill	0	0	-	-	-	-	-	-
Keppetigala	5	2	-	-	-	1	1	-

Reptiles: Reptiles were considered in all three assessments. A comparison of reptiles observed during the previous assessments and the present assessment is presented in Table 16.

Table 16. Summary of the reptiles recorded during the current assessment carried out in July/August 2021 and the two previous assessments carried out in 2012 and 2016. **Abbreviations used:** **CR** - Critically Endangered; **DD** - Data Deficient; **EN** - Endangered; **NT** - Near Threatened; **VU** - Vulnerable.

Assessment Year	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
2012	15	5						
2016	26	13		1		4	2	
2021	33	17			1	5	2	1

One endemic species recorded during 2012 assessment *Geckoella triedra* (Spotted bow-finger gecko) listed as nationally vulnerable was not recorded in either 2016 or present assessment. Further two endemic species recorded during 2012 and 2016 assessments *Cyrtodactylus fraenatus* (Great Forest Gecko) and *Hypnale zara* (Stripe-necked hump-nosed viper) listed as Critically Endangered and Near Threatened respectively were also not recorded in the present assessment. Further, three other species recorded in the 2016 assessment including two endemic species, *Fowlea asperrimus* (Sri Lankan Keelback), *Lissemys ceylonensis* (Sri Lanka Flapshell Turtle) and one native species *Boiga ceylonensis* (Sri Lanka cat Snake) was not observed in the present assessment.

During the present assessment 33 species were recorded including 17 endemic species and six threatened species. Altogether 14 new species have been recorded during the current survey including nine endemic and three threatened species. Two species of Blind Snakes of Family Typhlopidae was observed during the assessment. These were not identified to the species level due to taxonomic limitations.

Among the 15 estates assessed, the highest species richness and highest number of critical species was recorded in the Woodend and Miyanawita estates followed by Sapumalkanda Udapola and Illukthenna estates (see table 17). Estates in the Kegalle district had a relatively high species richness and critical species compared to Kurunegala district.

Table 17. Comparison of the reptiles recorded in each of the 15 estates considered in the current assessment.

Abbreviations used: **CR** - Critically Endangered; **DD** - Data Deficient; **EN** - Endangered; **NT** - Near Threatened; **VU** - Vulnerable; Sapumalkanda, Mahaoya, Udabage, Miyanawita and Pitiakanda.

Name of Estate	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Illukthenna	10	4	-	-	-	-	-	-
Reucastle	8	4	-	-	1	1	-	-
Sapumalkanda	11	4	-	-	-	-	-	1
Woodend	15	8	-	-	-	2	1	-
Densworth	6	4	-	-	1	-	-	-
Mahaoya	7	2	-	-	-	-	-	-
Udabage	7	5	-	-	1	1	-	-
Eila	8	4	-	-	-	1	-	-
Udapola	11	4	-	-	1	-	-	1
Miyanawita	15	8	-	-	1	-	2	1
Dabar	5	2	-	-	-	1	-	-
Muwankanda	8	4	-	-	-	-	-	-
Pitiakanda	7	5	-	-	1	-	-	-
Notinghill	7	3	-	-	1	-	-	-
Keppetigala	6	4	-	-	-	-	-	1

Birds: Birds were considered in all three assessments. A comparison of birds observed during the previous assessments and the present assessment is presented in Table 18.

Table 18. Summary of the birds recorded during the current assessment carried out in 2021/2022 and the two previous assessments carried out in 2012 and 2016. **Abbreviations used:** **CR** - Critically Endangered; **DD** - Data Deficient; **EN** - Endangered; **NT** - Near Threatened; **VU** - Vulnerable.

Assessment Year	Total Species	Endemic Species	Migrant Species	Conservation Status				
				CR	EN	VU	NT	DD
2012	56	7					1	
2016	86	18	4			3	4	
2021	108	17	9		1	3	9	

Six species recorded in the 2016 assessment including three endemic species, *Zosterops ceylonensis* (Sri Lanka White-eye), *Gracula ptilogenys* (Sri Lanka Myna), *Eumyias sordidus* (Sri Lanka Dull-blue Flycatcher) and three native species *Turnix suscitator* (Barred Buttonquail), *Phalacrocorax fuscicollis* (Indian Cormorant), *Bubulcus ibis* (Cattle Egret) were not observed in the present assessment. During the present assessment 108 species of birds were recorded including 17 endemic species and four threatened species. Altogether 26 new species have been recorded during the current survey including two endemic, five migrant and three threatened species.

Among the 15 estates assessed, the highest species richness and highest number of critical species (endemic and threatened) was recorded in the Udapola estate followed by Sapumalkanda, Reucastle, Mahaoya, Muwankanda and Miyanawita, all of which had more than 50 species (see table 19). All five groups supported rich avifaunal assemblages and the Sapumalkanda group recording the highest species richness and critical species.

Table 19. Comparison of the birds recorded in each of the 15 estates considered in the current assessment.

Abbreviations used: **CR** - Critically Endangered; **DD** - Data Deficient; **EN** - Endangered; **NT** - Near Threatened; **VU** - Vulnerable; Sapumalkanda, Mahaoya, Udapola, Miyanawita and Pitiakanda.

Name of Estate	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Illukthenna	44	8	-	-	1	-	2	-
Reucastle	56	12	1*	-	-	1	5	-
Sapumalkanda	59	11	-	-	-	1	3	-
Woodend	46	10	-	-	-	-	3	-
Densworth	41	7	5*	-	-	-	1	-
Mahaoya	54	7	6*	-	-	-	3	-
Udapola	37	6	-	-	-	-	3	-
Eila	42	6	-	-	-	-	2	-
Udapola	63	8	4*	-	1	-	5	-
Miyanawita	52	10	7*	-	1	1	3	-
Dabar	32	6	-	-	-	-	4	-
Muwankanda	53	12	-	-	-	-	4	-
Pitiakanda	39	7	-	-	-	-	1	-
Notinghill	43	7	-	-	-	-	1	-

Keppetigala	37	8	-	-	-	-	3	-
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Mammals: Mammals were considered in all three assessments. A comparison of Mammals observed during the previous assessments and the present assessment is presented in Table 20.

Table 20. Summary of the mammals recorded during the current assessment carried out in 2021/2022 and the two previous assessments carried out in 2012 and 2016. **Abbreviations used:** **CR** - Critically Endangered; **DD** - Data Deficient; **EN** - Endangered; **NT** - Near Threatened; **VU** - Vulnerable.

Assessment Year	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
2012	13	2	-	1	-	3	2	-
2016	15	2	-	-	2	-	3	-
2021	22	4	-	-	3	3	2	-

Two endemic species recorded during 2012 assessment *Vendelueria nolthenii* (Sri Lanka Long-tailed tree mouse) *Moschiola kathygre* (Sri Lanka pygmy Mouse deer) listed as Critically Endangered and vulnerable respectively were not recorded in either 2016 or present assessment. Further, one native species recorded during the 2016 assessments *Loris lyderkkerianus* (Grey Slender Loris) was also not recorded in the present assessment. During the present assessment 22 species of mammals were recorded including four endemic species and six threatened species. Altogether 8 new species have been recorded during the current survey including two endemic and four threatened species.

Table 21. Comparison of the mammals recorded in each of the 15 estates considered in the current assessment.

Abbreviations used: **CR** - Critically Endangered; **DD** - Data Deficient; **EN** - Endangered; **NT** - Near Threatened; **VU** - Vulnerable; Sapumalkanda, Mahaoya, Udabage, Miyanawita and Pitiakanda.

Name of Estate	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Illukthenna	8	1	-	-	-	1	2	-
Reucastle	11	2	-	-	3	2	2	-
Sapumalkanda	9	2	-	-	2	2	1	-
Woodend	10	2	-	-	-	1	2	-

Densworth	6	1	-	-	1	2	-	-
Mahaoya	8	1	-	-	1	1	2	-
Udabage	7	0	-	-	1	1	2	-
Eila	12	2	-	-	1	2	1	-
Udapola	12	2	-	-	2	1	2	-
Miyanawita	7	2	-	-	1	2	-	-
Dabar	4	1	-	-	-	-	-	-
Muwankanda	9	1	-	-	-	-	1	-
Pitiakanda	6	1	-	-	1	-	-	-
Notinghill	6	0	-	-	1	1	1	-
Keppetigala	10	1	-	-	-	2	2	-

Among the 15 estates assessed, the highest species richness and highest number of critical species (endemic and threatened) was recorded in the Eila and Udapola estates followed by Reucastle, Woodend and Keppetigala, all of which had more than 10 species (see table 21). Among the five groups assessed Udabage group recorded the highest number of species and critical species.

Plants: Plants were considered in all three assessments. However, the 2012 assessment report did not provide a detailed list of plant species instead information on plants present were provided at permanent sampling plot level. A comparison of Plants observed during the 2016 assessments and the present assessment is presented in Table 22.

Table 22. Summary of the plants recorded during the current assessment carried out in 2021/2022 and the two previous assessments carried out in 2012 and 2016. **Abbreviations used:** **CR** - Critically Endangered; **DD** - Data Deficient; **EN** - Endangered; **NT** - Near Threatened; **VU** - Vulnerable.

Assessment Year	Total Species	Endemic Species	Native Species	Exotic Species	National Conservation Status				
					CR	EN	VU	NT	DD
2012	NE	-	-	-	-	2	15	3	-
2016	248	37	137	52	1	2	14	-	-
2021	566	80	327	159	6	15	57	43	5

During the present assessment 567 species of plants were recorded including 80 endemic species and 79 threatened species. Thirty-five plant species recorded during the 2016 assessment including five endemic species and 8 exotic species were not observed in the present assessment. However, 356 new species including 47 endemics and 108 exotic

species were recorded during the current survey. Further 5 species listed as data deficient were also recorded during this survey. It should be noted that the main landscape comprises perineal crops such as tea, rubber, coconut, oil palm and cinnamon and the plant species present in such landscape consist of mostly herbaceous species that are found in the understory. Most of the endemic and threatened species were recorded in forest patches found scattered among plantation crops.

Among the 15 estates assessed, the highest species richness and highest number of critical species (endemic and threatened) was recorded in the Mahaoya estate followed by Udapola, and Reucastle, all of which had more than 175 species (see table 23). Among the five groups assessed the number of species and critical species recorded was relatively higher in the four groups present in the Kegalle district when compared to Kurunegala district, which was the expectation as Kegalle district is located in the submontane wet zone that supports high species diversity as well as endemism.

Table 23. Comparison of the plants recorded in each of the 15 estates considered in the current assessment.

Abbreviations used: CR - Critically Endangered; DD - Data Deficient; EN - Endangered; NT - Near Threatened; VU - Vulnerable; Sapumalkanda, Mahaoya, Udabage, Miyanawita and Pitiakanda.

Name of Estate	Total Species	Endemic Species	Exotic Species	National Conservation Status				
				CR	EN	VU	NT	DD
Illukthenna	117	7	45	-	1	7	2	3
Reucastle	185	31	55	2	2	16	11	3
Sapumalkanda	162	13	64	1	2	12	5	1
Woodend	134	14	45	1	3	9	4	2
Densworth	101	7	36	1	-	6	3	1
Mahaoya	194	29	49	2	3	14	15	2
Udabage	103	14	36	-	2	6	4	2
Eila	119	21	38	1	2	11	4	2
Udapola	195	17	68	-	2	14	9	2
Miyanawita	173	25	58	2	4	18	10	1
Dabar	81	13	27	-	-	6	4	1
Muwankanda	134	5	37	-	-	5	2	2
Pitiakanda	124	2	33	-	1	6	3	1
Notinghill	122	5	32	0	0	3	6	1
Keppetigala	121	7	35	-	2	6	3	2

4. Important Findings of the Assessment

4.1. Critical Species

1. Flint's Cruiser (*Macromia flinti*)

One specimen of the dragonfly Flint's Cruiser was observed in a riverine habitat at Dabar Estate. This species is known only from the original type specimen collected in 1970 from Uggalkalthota and few other observations. This is the first confirmed record of this species after 50 years. The global conservation status of the species is Critically Endangered while in the national conservation assessment done in 2012, the species was listed as a Data Deficient species due to lack of records. Based on the known observations, the habitat of Flint's Cruiser is medium to large rivers with a dense riparian vegetation and thus it is important to protect such habitats in the plantation areas to conserve the species.



Flint's Cruiser. Dabar Estate. Image: AS

2. Asoka Barb (*Systomus asoka*)

An endemic freshwater fish species that is restricted to the Kelani river basin of Sri Lanka. It inhabits moderate to large water ways with sandy or gravel substrate and a moderate flow. Adults are usually found in 1 or 2 meter deep water and juveniles usually shoal together in much shallower water. Asoka Barb was observed in Paladeniya Stream flowing at the boundary of Udapola Division, Udapola Estate. It may also be present along the rivers in Deraniyagala region such as the Seetawaka River and Kambili Oya.



Asoka Barb. Udapola Estate. Image: AS

3. Silver Forget-Me-Not (*Catochrysops panormus*)

This nationally Critically Endangered butterfly was reported from multiple localities in the surveyed estates, i.e. Rangegama Division, Woodend Estate; Walpola Division and Clunes Upper Division, Sapumalkanda Estate; Reucastle Division, Reucastle Estate; Ernen Division, Mahaoya Estate; Densworth Division, Densworth Estate. It is locally common in areas where its larval food plant, *Flemingia macrophylla* grows.



Silver Forget-Me-Not. Image: AS

4. Sri Lanka Paintbrush Swift (*Baoris penicillata*)

This is an endemic and a Critically Endangered butterfly species confined to the wet zone of Sri Lanka. It inhabits forested areas below 1,400 m and in considerable stands of the bamboo *Ochlandra stridula*. One individual was recorded at the “Weli Muwa” HCV site (site D85) in the Woodend Division, Woodend Estate. There is a possibility of the species to be present in other forest habitats with *Ochlandra stridula*.



Paintbrush Swift. Woodend Estate. Image: AS

5. *Strobilanthes thwaitesii*

This endemic Nelu species was first described by T. Anderson in 1860. It was based on a specimen collected from Ambagamuwa, foothills of Sri Pada. In the 2012 National Red List this species was listed as a Critically Endangered (Possibly Extinct) species. However, two recent observations made after 2012 allowed the species to be assessed as Critically Endangered in the 2020 assessment. *S. thwaitesii* was reported near the Timber-Toraliyana PSP (Site D17) at Nahelma Division, Reucastle Estate and this is the fourth known locality record for this rare species.



Strobilanthes thwaitesii. Reucastle Estate. Image: NC

6. *Acrotrema dissectum*

An endemic herb, growing on wet surfaces of wet zone forests. Sometimes called බිම් බෙරු in Sinhalese. This was first published by G.H.K. Thwaites in 1856 based on a specimen collected from Hewesse, Pasdun Korale, Galle District in May 1855. After that there was a single record of a specimen collected from Gulanawatte forest near Pelawatta, Kaluthara district in 1969. Due to its rarity and lack of known occurrence records *A. dissectum* was listed as a Critically Endangered species in both 2012 & 2020 conservation assessments. This plant was observed on rock surfaces outside the caves in the forest patch above 2019 rubber field, Eila Division, Eila Estate (Site D54). This is the third known record of the species and most probably the first photographic record as well.



Acrotrema dissectum. Eila Estate. Image: NC

7. *Flemingia macrophylla*

Flemingia macrophylla (ඉඳි උළු in Sinhala), is a very rare shrub which has been listed as a Critically Endangered (Possibly Extinct) species at the national conservation assessment 2012. Based on recent findings, this species has been down listed to a Critically Endangered species in the 2020 assessment. This native species is distributed in the tropical and subtropical Asia to northern Queensland. As per the observations made, it was found in several locations in the rubber plantations and disturbed areas in Sapumalkanda Group. This is a very important species because it is also the food plant of the Critically Endangered butterfly Silver Forget-Me-Not (*Catochrysops panormus*).



Flemingia macrophylla. Image: NC

8. *Lasianthus thwaitesii*

This species is an endemic shrub. It grows in undisturbed forests in the wet lowlands and submontane regions in the country. It is a Critically Endangered species and was only reported in the Kosgahakanda HCV Forest in Miyanawita Estate during the present survey.



Lasianthus thwaitesii. Miyanawita Estate. Image: NC

9. *Barleria courtallica*

A semi-shrubby herb growing in the shady habitats in submontane or mid-country wet evergreen forests up to 1200m. It is a native and a Critically Endangered species that was observed in the Kosgahakanda HCV Forest in Miyanawita Estate.



Barleria courtallica. Miyanawita Estate. Image: NC

10. *Diospyros koenigii*

This is an endemic tree species, growing up to 15m in height and around 50cm in diameter. Often mistaken for the similar and more familiar species *Diospyros ebenum* (Kaluwara), this is a Critically Endangered species with only very few confirmed records. It was observed in the Rubber 1997 HCV catchment in Mahaoya Division, Mahaoya Estate.



Diospyros koenigii. Mahaoya Division. Image: HJ

4.2. Critical Habitats

1. Riverine habitats of Dabar Estate (Site D72)

The dense riverine area and adjoining abandoned timber block provides an important riverine habitat for multiple species. The globally Critically Endangered Flint's Cruiser was observed at this site. It is recommended to conserve as much area of the riverine habitat as possible to support Flint's Cruiser and other threatened species that prefers such habitats.



2. Caves above R2019 of Eila Division, Eila Estate (Site D54)

The two caves and the surrounding forest patch provides a unique habitat combination in this site. The larger cave was occupied by bats and the workers informed us it is occupied by a larger colony of bats in some seasons. The caves also support other cave dwelling invertebrate fauna and the rocky surface outside the cave provides a microhabitat for herbaceous plants specially adapted to such microhabitats including the Critically Endangered *Acrotrema dissectum* described above. Considering the overall uniqueness of the site and its biodiversity, it is recommended that the area that contains this cave is to be declared as a conservation area. We were also informed that there is another cave in the forest patch on the other side of the R2019 field and this also could be a potential site to be conserved.



5. Environmental Values and Ecosystem Services

5.1 Environmental Values

Environmental values refer to a set of paradigms that defines the way an individual or group of people perceive and evaluate environmental issues. How an individual or a group of people value the environment will depend on cultural, economic and socio-political context. In this case what matters is the environmental values held by Lalan Agri Division that manages approximately 7,760 Ha of plantations comprising mainly of Rubber, Coconut, Tea, Oil Palm, Cinnamon, and Forestry. The environmental values held by the Lalan Agri Division is clearly spelt out in their publication titled Best Practices and Sustainability Initiatives². The main environmental focus of the Lalan Agri Division is to create a sustainable agricultural landscape in the estates managed by them. They plan to achieve this through, reduction in the use of agrochemicals, maintaining areas identified to high conservation value within their production landscape as chemical free zones, enhancing soil quality, reduction of soil erosion, maintaining proper drainage systems and managing their landscape in manner that will support a high biodiversity.

These environmental values are reflected in the findings of this assessment as it indicates that the Lalan landscape supports a significant proportion of the species reported in Sri Lanka for the eight taxonomic groups considered in the biodiversity assessment (table 24).

Table 24. Comparison of the species recorded in the Lalan landscape with species recorded for Sri Lanka for the eight focal taxonomic groups considered in the assessment.

Taxa	Total Species	Endemic Species	All Species Recorded in Sri Lanka			
			Total	%	Endemic	%
Dragonflies	58	26	130	45	58	45
Butterflies	112	10	248	45	31	32
Freshwater Fish	33	17	97	34	58	29
Amphibians	21	16	120	18	107	15
Reptiles	33	16	243	14	158	10
Birds	108	17	515	21	34	50
Mammals	22	4	96	23	23	17
Sub-Total (Fauna)	387	106	1449	27	472	23
Plants	567	80	3120	18	904	9
Total (Species)	954	186	4569	21	1376	14

² Lalan Rubbers (2021). Best Practices and Sustainability Initiatives Undertaken by Lalan Agri Division. 56 pp.

With respect to species, the proportion found in the Lalan landscape varies between 14% to 45% of what has been recorded for Sri Lanka, with an average of 27% for the seven faunal groups assessed. For flowering plants 18% of the species recorded in Sri Lanka has been recorded within the Lalan landscape assessed. With respect to endemics, the same trend was observed with the proportions varying between 15% to 50% for fauna recorded in Sri Lanka with an average of 23% while among the flowering plants recorded 9% of the endemic species recorded in Sri Lanka being reported.

This indicates that even though a production landscape for perennial crops, if well managed, can serve as an important biodiversity refuge for native and endemic species, a fact that has been grossly overlooked by the conservation planners. Thus, results of this assessment indicate that a well-managed production landscape can play an important role in the biodiversity conservation and should receive equal attention as the conservation landscapes such as protected areas. Further, estate management should be encouraged and rewarded for the role they play in overall biodiversity conservation efforts of the country.

5.2 Ecosystem Services

Ecosystems provide a range of goods and services created by the interactions of living organisms with their environment. These goods and services are collectively referred to as “Ecosystem Services”. All forms of life on earth including human beings depend extensively on these ecosystem services. The capacity of an ecosystem to provide services depends on its state and this has led to the idea that healthy ecosystems are essential for human well-being. The health of an ecosystem is defined by three attributes, namely organization (ability to maintain its structure), vigor (ability to maintain its functions) and resilience (ability to withstand external stress). If an ecosystem possesses these three attributes it can be considered as stable and capable of providing maximum ecosystem services. Therefore, landscape managers must strive to achieve these three attributes whether it is a conservation landscape or production landscape,

As defined by the Millennium Ecosystem Assessment (MEA, 2005)³, ecosystem services can be subdivided into four categories: Provisioning, Regulating, Supporting and Cultural Services (MEA, 2005).

³ Millennium Ecosystem Assessment. (2005). *Ecosystems and Human Well-Being: A Framework for Assessment*. Available: <http://www.millenniumassessment.org/en/Framework.html>.

1. Provisioning services include the goods provided by the ecosystems such as food, raw materials, fresh water and medicinal resources.
2. Regulating services include local climate and air quality regulation, carbon sequestration and storage, moderation of extreme events, waste-water treatment, erosion prevention and maintenance of soil fertility, pollination and biological control.
3. Supporting services include the provision of habitats for species and maintenance of genetic diversity.
4. Cultural services include opportunities provided by ecosystems for recreation and improvement of mental and physical health, tourism, aesthetic appreciation and inspiration for culture, art and design, and spiritual experience and sense of place.

A specific landscape may provide a range of ecosystem services depending on the type of ecosystems present. Likewise, the ecosystem services provided by a given ecosystem may be enjoyed locally, regionally or globally depending on the type of service being considered. For instance, a pristine forest patch on top of a watershed may harbor pollinators which will provide services at a local scale; forest will also improve the water quality and quantity that flows through it to the stream network that may be enjoyed both locally as well as regionally and the carbon sequestered by the forest will influence the climate which is a service enjoyed globally.

Biodiversity provides goods and services, commonly referred to as Biodiversity and Ecosystem Services (BES), upon which all people depend in their day to day lives, but also sustain economic development. The Biodiversity and Ecosystem Services range from tangible (food, medicine, fibre, wood) to intangible (pollination, seed dispersal, nutrient recycling, climate regulation, flood regulation, pest and disease control, water purification, clean air, recreation, spiritual inspiration) benefits. Thus, conservation of biodiversity is critically important to sustain livelihoods and wellbeing of people, and to ensure political and governance stability.

Very little studies have been done on the ecosystem services provided by production landscape in Sri Lanka as well as in other countries as most of the studies on Ecosystem services have focused on the natural landscapes. Therefore, the above discussion presented was based primarily on field observations and findings of the studies done elsewhere in similar production landscapes. When considering the production landscape managed by Lalan Agri Division, the following are the major ecosystem services observed during the current assessment.

Provisioning Services: The main objective of the production landscape is to produce tea, rubber, coconut, oil palm and therefore this should be considered as the major provisioning service obtained. In addition, the landscape provides biomass for estate operations from the specific woodlots maintained for this purpose. The estate workers also obtain their fuel wood requirement from the estate. In addition, the water sources in the landscape provide both drinking water and water to meet other demands of the estate workers such as washing and bathing. Most of the estates, especially the estates in the Kegalle district had freshwater streams with high water quality and yield that can provide water for the community living in the estates as well as downstream communities and therefore, this service has a regional impact.

Regulating services: The main regulating services provided by the production landscape includes air quality regulation, climate regulation, water regulation, erosion regulation, natural hazards regulation and pollination. The production landscape, especially areas under forest, rubber and oil palm contribute to air quality regulation as they prevent dust generation by covering the soil surface and the leaves of these trees can trap dust and other particles. The air quality of the estate landscape (even though was not measured during the assessment) can be assumed to be good based on the high incidence of indicator species such as lichens on tree trunks in all 15 estates. Since the production landscape comprise of perineal crops the plants sequester carbon over a long period and thereby contribute to climate regulation. Since the crops grown in the production landscape serves as a catchment vegetation (even though the catchment function would not be as high as the function produced by a undisturbed forest) it contributes to water regulation as the vegetation can intercept rain and mist, slow down surface flow rates facilitating groundwater recharge and prevents erosion. The water regulation function depends on the architecture of trees that make up the vegetation, structural complexity of the vegetation and the ground litter content. These attributes vary between the perineal crops with land under rubber providing the highest level of function followed by Oil palm, coconut and tea based on the data reported elsewhere. Plantation crops can also stabilize the slopes as well as regulate water which can contribute to regulation of natural hazards such as landslides within the landscape and floods and droughts downstream of the river basin where the estate is located. During the survey it was observed that the plantation landscape support large populations of bees and wasps based on the presence of their hives. These species are excellent pollinators and therefore can provide the pollination function within and in the vicinity of the estate lands.

Supporting services: The main supporting services provided by the production landscape includes primary productivity, providing habitats for species, nutrient capture and recycling and maintenance of genetic diversity. Since the landscape is managed for perineal crops one of the

main services provided by the landscape is enhanced primary productivity. As was discussed in the previous section the 15 estates assessed serve as important biodiversity refuge for native and endemic species. Therefore providing habitats for both common and rare species is another major ecosystem function provided by the production landscape. Further, based on what is reported in the literature, land under perineal crops can also carry out effective recycling of nutrients. The estates, especially the ones in the Kegalle district have an extensive stream network and the streamside vegetation as well as the forest patches scattered within the estates carry out the function of habitat connectivity and therefore facilitate gene flow of wild species.

Cultural services: The main cultural services provided by the production landscape includes cultural and spiritual sites. The local estate workers have established worshipping sites under large trees scattered around many of the estates. However, during the assessment it was noticed that there is huge untapped potential within the production landscape to exploit many other cultural services such as recreation, ecotourism, scientific research etc., The management is encouraged to explore these options as long as they do not create a conflict with the overall productivity of the landscape.

6. Conclusions and Recommendations

6.1 General Conclusions of the Assessment

Results of the present assessment indicates that the total species richness is higher in the current survey for all the eight taxonomic groups included in this assessment. The number of endemic and threatened species recorded was also high for seven out of the eight taxonomic groups considered during the present survey compared to the previous surveys. Therefore, it can be inferred that compared to the previous surveys, the species richness as well as number of endemic and threatened species remains equal or higher in most instances. It should be noted that some of the species recorded during the previous assessments have not been recorded during the present survey and number of new species including endemic and threatened species have been newly recorded during the present assessment.

However, the observed increase in the species richness and number of endemic species and threatened species has to be interpreted carefully as this could have resulted due to number of reasons as specified below.

- The increase in the number of species could be the result of improved management of natural areas that has resulted due to colonization of these areas by new species. If this is the case, it indicates better management of natural habitats.
- The number of species that are recorded during an assessment is a function of effort which is not standardized across assessments. Therefore, the difference in the effort may results in a higher number of species including endemic and threatened species. The sampling effort across the three surveys indicate increased trend in the sampling effort (13 PSPs in 2012; 89 PSPs in 2016 and 168 sites including 84 PSPs in the present assessment). Therefore, number of species recorded should also increase accordingly and it is likely that even the present survey has not captured the entire species diversity of the Lalan landscape.
- The number of species that are recorded during an assessment is also a function of the skill of the observers. Since this factor is also not standardized across assessments the level of skill may result on higher or lower number of species in a given assessment. Even though an attempt has been made across assessment to maintain the same methodology, the skill level cannot be kept constant even if the same field team was to conduct the survey as there is a likelihood that the field assessors will also improve with time in terms of skill in identification of species. Thus, this between sample variability due to differential skill between sampling

cannot be avoided other than kept minimum by employing the same sampling approach across assessment which has been done.

- The time of sampling is also an important factor as species show seasonal and temporal variations and therefore two assessments done at the same landscape at two different times will yield different results.
- The taxonomic revisions can be another factor that can result in differences between two assessments. In Sri Lanka there is a tendency to describe new species on a regular manner and improvement in taxonomic knowledge will result in the ability to identify species within a given landscape. For instance, dragonflies were not included in the 2012 assessment and subsequent two assessments indicate increasing numbers. Further, the taxonomic status of species can also change between two assessments due to revisions as some valid species as well as endemic species will be removed or added on a continuous basis. For instance, *Dawkinsia filamentosa* (Sri Lanka Filamented Barb) listed as an endemic species in 2012 and 2016 assessment is no longer considered as a valid endemic species. Also, the threat status of the species is periodically updated and therefore between assessments the global and national listing will change and this will result in the change in the number of threatened species.
- The number of species that are recorded during an assessment is also a function of the different types of ecosystems assessed. Even though there is high level of comparability between assessments as these are based on a set of marked permanent sampling plots, data collection is not limited to these PSPs as each time additional sampling points are included based on the experience of field teams. During the current assessment an additional 40 sites have been sampled compared to the previous assessment and this too could have contributed to the increased numbers recorded.
- Thus, all these aspects will have to be given due consideration when undertaking an objective comparison across time to identify long term trends in species composition of a landscape.

However, it can be safely concluded that the species richness as well as number of critical species (endemic and threatened species) have not undergone a decline between the two assessments. Based on the findings of this assessment and the field observations the following set of recommendations can be made.

6.2 General Recommendations based on the assessment

6.2.1 Monitoring and Conservation of Critical Species

During the assessment, four species of Critically Endangered fauna and six species of Critically Endangered plants were recorded among the focal taxa sampled. It is of national importance to conserve these species as most of these are endemic and rare species at the national level. Some of these species observed were reported from the already established conservation areas in the estates while others were reported from other localities studied. Based on the field observations, following activities are proposed for monitoring and conservation of these species.

Species	Monitoring plan	Conservation actions
Flint's Cruiser (<i>Macromia flinti</i>)	Establish a new PSP in the riverine area of Kambili Oya. Conduct annual monitoring for the species and the habitat condition. Monitoring is recommended during the period June-October.	Conserve the riparian habitat of Kambili Oya, Dabar Estate. Maintain the buffer zones in any other riparian areas in the estate, especially in large streams. Enrichment of riparian habitats with suitable native plants where necessary.
Silver Forget-me-not (<i>Catochrysops panormus</i>)	Monitor the population in sites where the species have been observed. Monitoring is recommended during the period June-October.	Maintain patches of native plants including the host plant (<i>Flemingia macrophylla</i>) in plantation areas, riparian habitats and home gardens. Maintain some native plant cover during site disturbing activities.
Paintbrush Swift	Monitor the population of the species in the "Weli Muwa" HCV site. Establish a PSP in the area and monitor the habitat condition and host plant population. Monitoring is recommended during the period June-October.	Identify the "Weli Muwa" HCV site in Woodend Estate as a conservation area and manage it accordingly. Conserve forest areas with a dense undergrowth of the bamboo <i>Ochlandra stridula</i> , which is the host plant of the species.

<p>Asoka Barb (<i>Systemus asoka</i>)</p>	<p>Monitor the population in Paladeniya Stream using bankside counts during the dry season where water levels are relatively low.</p>	<p>Conserve the Paladeniya stream and riparian area by maintenance of buffer zones and enrichment planting with suitable species.</p> <p>Manage aquatic pollution, fishing and other activities at the site with the participation of stakeholders.</p> <p>Conduct community awareness programs on the species and the importance of the habitat.</p> <p>Conserve all river habitats such as Kambili Oya and Seetawaka river and their riparian areas in the plantation landscape.</p>
<p><i>Acrotema dissectum</i></p>	<p>Establish a PSP at the site and monitor the habitat condition annually following standard PSP monitoring procedure.</p> <p>Conduct annual monitoring of the population size on the rock surface outside the cave.</p>	<p>Establish the forest patch as a HCV/conservation area.</p> <p>Prohibit and prevent any disturbance to the habitat.</p>
<p><i>Flemingia macrophylla</i></p>	<p>Monitor the population at the sites where the species is present.</p> <p>The number of Silver Forget-me-not butterflies seen during monitoring can be recorded at each location.</p>	<p>Maintain the patches of native shrub in plantation area, riparian habitats and other open areas.</p> <p>Investigate the presence of the species in plantation areas prior to site disturbing activities and if present, conserve the population.</p>
<p><i>Strobilanthes thwaitesii</i></p>	<p>Monitor the population size at its habitat.</p>	<p>Identify the population in Timber Toraliyana field and vicinity, Nahelma Division, Reucastle Estate and maintain it by establishing a conservation site.</p>

		Prevent damage to the population by site disturbing activities.
<i>Lasianthus thwaitesii</i>	Continue monitoring of the established PSP in the site.	Continue managing the Kosgahakanda HCV forest without any disturbances.
<i>Barleria courtallica</i>	Continue monitoring of the established PSP in the site.	Continue managing the Kosgahakanda HCV forest without any disturbance.
<i>Diospyros koenigii</i>	Establish a PSP in the site. Conduct periodic monitoring following standard monitoring methods implemented and evaluate the species and habitat condition.	Conserve the Rubber 1997 HCV catchment area in Mahaoya Estate as a conservation forest. Prevent any damage to the habitat.

6.2.2 Revising the sites designated as High Conservation Values

1. During the field assessment it became clear that some of the small forest patches that functions as habitats for critical species has not been identified as HCV sites even though they qualify to be designated as HCVs e.g., cave site and the riverine habitat described above. Therefore, it will be important to reassess the HCV site classification and come up with a more representative set of HCVs. This does not indicate that the initial HCV classification is erroneous. However, landscapes are dynamic entities that undergo constant change, and the previous biodiversity assessment has been conducted six years ago and thus there are changes in the landscape which has created new sites that should be designated as HCVs. This will ensure that these sites will receive the attention of the management and at the same time allow better alignment with FSC principles. Thus, it is recommended that the management take a policy decision that at the end of each biodiversity assessment the HCVs should be revised based on the findings of the assessment and the new HCVs should be incorporated into the overall management strategy until the next biodiversity assessment. Recommendations for the revision of HCVs will be provided in the individual estate reports.
2. There are multiple HCV sites identified based on single or irregular observations of somewhat familiar and recognizable species such as “Rusty spotted Cat”, “Weli Muwa” and “Bulath Hapaya”. The HCV assessment protocol recognizes HCVs under Species Diversity (HCV category 1) based on the presence of a significant diversity and/or

concentrations of endemic or rare, threatened or endangered (RTE) species, in comparison to the entire landscape. A single sighting of a species does not necessarily qualify an area as an HCV site. Also, as species often moves across the plantation landscape, it is of little use having single locations being identified as HCV sites. A more successful strategy would be to recognize the nearest considerable habitat patch or forest as an HCV area as it does have a better chance of supporting the population of the observed species. Attention must also be given to accurate assessment of identification and conservation status of any such species in the landscape prior to recognizing an HCV under the category.

Proposed HCV areas

Estate	Division	Site	Category	Justification
Eila	Eila	Caves and the forest patch above R 2019 field	1	One of the three known localities where the Critically Endangered and endemic <i>Acrotrema dissectum</i> has been reported.
			3	The caves in the forest patch are rare habitats, which supports a unique assemblage of species.
Dabar	Dabar	Riverine area of Kambili Oya	1	One of the few localities where the Critically Endangered and endemic dragonfly <i>Macromia flinti</i> has been reported.

6.2.3. Conservation Areas

The assessment indicated that there are sites within the estate that can be treated as conservation areas as these habitats can function as refugia for endemic and threatened species as well as improve habitat connectivity with the estate landscape by functioning as stepping-stones, thereby improve gene flow within the otherwise fragmented landscape. Several such areas that can be managed as conservation areas are proposed in the table below. These areas can be left alone without causing disturbance as well as these sites can be enriched by endemic and threatened plants that can serve as food plants of birds and butterflies that can further improve the conservation value of these habitats.

Proposed Conservation areas

Estate	Division	Site	Significance
Pitiakanda	Pitiakanda	Secondary forest patch in C19 field	A secondary forest patch in the middle of the coconut plantation. It can act as a refuge for local biodiversity and a stepping stone for species moving across the landscape.
Mahaoya	Mahaoya	Rubber 1997 HCV catchment	A small patch of a secondary forest where the Critically Endangered tree <i>Diospyros koenigii</i> was observed.
Mahaoya	Glasel	Rubber 1990 HCV spring	A forest patch with a considerable extent. Likely to harbor endemic and threatened species of fauna and flora.
Woodend	Woodend	Weli Muwa HCV	A patch of secondary forest. The Critically Endangered Paintbrush Swift butterfly was observed here.

6.2.4 Important aquatic habitats

1. Some of the water intakes can be further improved in terms of enhancing the vegetation cover and thereby reduce the sediment flow into water. Further, as some plants have the ability to uptake heavy metals and other potential toxicants this would provide an opportunity to enhance the natural water purification function. This would also help improve the biodiversity in these locations. A list of water intakes that can be improved and the types of plant species that can be used for this purpose will be provided in the individual estate reports.
2. There are number of streams, especially in the Deraniyagala area that support important aquatic species assemblages and these streams can further benefit through restoration of the riverine vegetation. A list of riverine stretches that can be improved and the types of plant species that can be used for this purpose will be provided below.
3. Some aquatic pollution was observed in streams used by the local communities for washing and bathing. Additional conservation measures with the involvement of the local stakeholders can be implemented to control this such as reduction of the use of detergents, introducing a collection receptacle for plastic saches that contain detergents and shampoo.

Important Stream habitats identified in the present assessment

Estate	Division	Stream	Significance
Udapola	Udapola	Paladeniya Ela	A habitat for multiple species of threatened fish, dragonflies and aquatic plants including the Critically Endangered fish Asoka Barb (<i>Systemus asoka</i>).
Woodend	Yogama	Stream near 2004 Rubber PSP	A habitat for multiple species of threatened fish, dragonflies and aquatic plants.

6.2.5 Revising the existing PSPs

Based on the findings of this study it is clear that the current list of study sites has to be critically evaluated with respect to the FSC criteria and ideal set of sites are developed including additional sites to capture critical changes identified between the previous study and the present situation. It should be noted that the landscapes undergo continuous change and therefore the list of study sites used for biodiversity assessment should be continuously revised to capture best possible information. However, some of the sites must be designated as permanent sampling plots to ensure long term comparisons in biodiversity change.

Proposed PSPs

Estate	Division	Area	Requirement of a new PSP
Miyanawita	Kosgahakanda	Kosgahakanda HCV forest	The forest extends over 235 ha. An additional PSP is recommended to represent the large area.
Eila	Eila	Forest patch above the R2019 field	The forest and the cave are proposed as a HCV site. A new PSP is required to monitor the critical biodiversity in the site.

During the present assessment it was noted that there were multiple PSPs established in fields with short term crops. It is recommended to establish PSPs only in fields with long term crops or managed under the same management objective for a considerable length of a time to increase the productivity of managing and monitoring PSPs and allowing a better comparison over time.

Additional changes recommended are included in the relevant estate profiles.

6.2.6 Habitat enrichment and reforestation

Habitat enrichment has been recommended in refugia, riverine and streaside habitats and home gardens as well as other abandoned areas within the estate landscape which will contribute to enhanced biodiversity. A list of plants that can be used for this purpose is listed below for Deraniyagala and Mawathagama regions respectively as these two regions belongs to different floristic zones and therefore the most suitable plants for each floristic zone were selected when drawing up these species list as well as their ability to support fauna such as birds and butterflies.

Plants suitable for enrichment planting in Deraniyagala region (DS - Distribution status)

Species	Common Name	DS	Suitable Habitat	
			Terrestrial	Aquatic
<i>Erythrospermum zeylanicum</i>	දොඩන්වැන්න	Endemic	+	
<i>Camptosperma zeylanicum</i>	ආර්ද්ද	Endemic	+	
<i>Semecarpus gardneri</i>	උයන් බදුල්ල	Endemic	+	
<i>Anisophyllea cinnamomoides</i>	වැලිපැන්න	Endemic	+	
<i>Monoon acuminatum</i>	ඉනිපෙන්නු	Endemic	+	
<i>Xylopia patoniae</i>	අතුකැටිය	Native	+	
<i>Canarium zeylanicum</i>	කැකුණ	Endemic	+	
<i>Calophyllum acidus</i>	කීන	Endemic	+	
<i>Calophyllum inophyllum</i>	දොඹ	Native		+
<i>Bhesa ceylanica</i>	පෙලන්	Endemic		+
<i>Garcinia quaesita</i>	ගොරකා	Endemic	+	+
<i>Terminalia zeylanica</i>	හම්පලද	Native	+	+
<i>Dillenia retusa</i>	ගොඩපර	Native		+
<i>Schumacheria castaneifolia</i>	මහ කැකිරිවරා	Endemic	+	
<i>Diospyros insignis</i>	ගෝන	Native	+	
<i>Elaeocarpus subvillosus</i>	ගල් වෙරළ	Endemic	+	+
<i>Macaranga peltata</i>	කැන්ද	Native	+	
<i>Mallotus tetracoccus</i>	බු කැන්ද	Native	+	
<i>Cinnamomum dubium</i>	සෙවෙල් කුරුදු	Native	+	+
<i>Litsea longifolia</i>	රත් කැලිය	Endemic	+	+
<i>Lagerstroemia speciosa</i>	මුරුත	Native		+
<i>Bombax ceiba</i>	කටු ඉඹුල්	Native	+	
<i>Durio ceylanicus</i>	කටුබොඩ	Endemic	+	
<i>Artocarpus nobilis</i>	වල් දෙල්	Endemic	+	
<i>Myristica ceylanica</i>	මළබොඩ	Native	+	+
<i>Syzygium neesianum</i>	පණු දං	Native	+	+

<i>Acronychia pedunculata</i>	අන්කෝද	Native	+	+
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Plants suitable for enrichment planting in Mawathagama region (DS - Distribution status)

Species	Common Name	DS	Suitable Habitat	
			Terrestrial	Aquatic
<i>Lannea coromandelica</i>	හීක්	Native	+	
<i>Mangifera zeylanica</i>	ඇටඹ	Endemic	+	
<i>Nothopegia beddomei</i>	බල	Native	+	
<i>Alstonia scholaris</i>	රක් අත්තන	Native		+
<i>Celtis philippensis</i>	මැදිතැල්ල	Native		+
<i>Celtis timorensis</i>	ගුරුන්ද, ගුරුන්ද	Native		+
<i>Elaeocarpus serratus</i>	වෙරළ	Native	+	
<i>Albizia lebbek</i>	මාර	Native	+	
<i>Vitex altissima</i>	මිල්ල	Native	+	
<i>Litsea glutinosa</i>	බෝමිබි	Native	+	+
<i>Neolitsea cassia</i> var. <i>cassia</i>	දවුල් කුරුඳු	Native	+	
<i>Berrya cordifolia</i>	හල්මිල්ල	Native		+
<i>Grewia helicterifolia</i>	බොර දම්ණිය	Native	+	
<i>Grewia tiliifolia</i>	දම්ණිය	Native	+	+
<i>Pterospermum suberifolium</i>	වෙලන්	Native	+	
<i>Ficus racemosa</i>	අට්ටික්කා	Native		+
<i>Syzygium cumini</i>	මා දං, දං	Native	+	
<i>Bridelia retusa</i>	කැට කැල	Native	+	
<i>Margaritaria indica</i>	කරච්ච, මහ කරච්ච	Native		+
<i>Dimocarpus longan</i>	මොර, රස මොර, පැණි මොර	Native	+	
<i>Schleichera oleosa</i>	කෝන්, අලොන් ගස්	Native	+	

6.2.7 Management of Alien Invasive Species

Several invasive species of fauna and flora recorded in the region were also reported from the estates during the present assessment. These include *Alstonia macrophylla* (Hawari nuga), *Chromolaena odorata* (Podisinnomaran), *Mikania cordata* (Wathu palu), *Miconia crenata* (Kat-kalu bovitiya) and *Lantana camara* (Gandapana), all of which were observed at all 15 estates while other invasive species such as *Austroeupeatorium inulifolium*, *Ludwigia peruviana* (beru diyanilla), *Leucaena leucocephala* (Ipil ipil) and *Miconia calvescens* (Walewat gas) were observed only in one or two estates. *Dillenia suffruticosa* (Para) a species that is rapidly spreading in lowland and mid elevation areas in the southwestern wet zone, was also observed in almost every estate in Deraniyagala region.

Lissachatina fulica (the Giant African Snail) is the most common invasive animal in the landscape. It was observed in all 15 estates. Further, *Oreochromis niloticus* (Tilapia), listed as a potentially invasive alien fish was recorded from a single site in Densworth Estate.

It is recommended that long-term monitoring of abundance and spread of the invasive species should be done using the established PSPs. Further, regular monitoring can be done by visual observations with the support of trained field staff.

An AIS management plan can be drawn out at estate level for methodically removing these species. This will include mapping the distribution of all the alien invasive species at estate level which will provide the approximate extent of infestation. This can also be used to prioritise which species should be managed. Ideally those species that show a small distribution can be removed first as it is more feasible. Removal of alien invasive species must be accompanied by a plan to maintain these areas at least for a period of one year as these species can reestablish from the seed bank that may be present in the ground or coppice out from remaining roots. Thus, several cycles of removals will be necessary to completely eradicate an AIS from an area. Further disposal of removed plants should be done very carefully. They should be destroyed within site if possible or transported to a safe site in a covered vehicle where they will be destroyed. It is recommended that estates seek the advice of an Alien Invasive Species management specialist if they wish to undertake AIS management to get more effective results as well as follow best practices in managing these species.

6.2.8 Plantation Landscape and management

1. In some of the estates certain blocks are being earmarked for planting timber trees. However, at present a given block is planted with a single tree species. If these timber lots can be planted as a mixed crop comprising of trees that are of different heights it will create a forest like structure which will help achieve the objective of the plantation whilst enhancing the ecosystem services provided by such woodlots.
2. Another activity that can be undertaken at pilot scale is to promote small scale agro-forestry projects around housing areas provided for the estate workers. It was observed that such vegetation types are already present in some of the estates. This type of small agro-forestry lots can benefit the estate workers as they will provide goods as well as livelihood opportunities. At the same time these small agro-forests will attract more species into the plantation landscape and therefore contribute to increase in the overall biodiversity that will benefit the plantation as some of these species can help keep the

pest populations down while it will also improve the biodiversity profile of the estate as well as provide pathway to achieve the sustainable production goal.

3. Some of the very rare and Critically Endangered species observed during the assessment were observed at locations outside the currently recognized conservation areas and HCV sites. The observations of Flint's Cruiser dragonfly in the riverine habitat of Kambili Oya in Dabar Estate, Asoka Barb fish in Paladeniya Stream bordering the Udapola Estate and the plant *Acrotema dissectum* in the forest patch above 2019 Rubber field in Eila Division, Eila Estate are some such examples of observations with national and even global significance. These observations highlights the importance of conducting wider biodiversity assessments in the entire plantation landscape and also of conducting environmental assessments prior to any significant site disturbing activities in plantation areas to minimize the damage to local biodiversity.

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Annex 1. Permanents sampling plots of different vegetation types and their GPS coordinates in the 15 estates sampled.

Group	Estate	Division	Site	Site type	Site code	Latitude	Longitude	Elevation (m)
Pitiakanda	Pitiakanda	Pitiakanda	Conservation Forest	Forest - PSP	P1	7.42435	80.43659	229
			Rubber (2003)	Rubber - PSP	P2	7.42392	80.43651	214
			Rubber (2010)	Rubber - PSP	P3	7.41447	80.43651	314
			Rubber (1991)	Rubber - PSP	P4	7.42296	80.43939	220
			Coconut (1984)	Coconut - PSP	P5	7.42614	80.44061	210
			Secondary forest patch in C19	Forest	P6	7.42671	80.44119	220
		Pilessa	Stream R13/HCV Catchment	Stream	P7	7.44512	80.43708	197
	Nottinghill	Dee Ella	Coconut C5	Coconut - PSP	P8	7.37742	80.47066	247
			Timber - Khaya	Timber - PSP	P9	7.37703	80.47122	253
			HCV Forest	Forest - PSP	P10	7.37677	80.47140	259
			Stream - C1, C2, C3	Stream	P11	7.37737	80.47234	245
			HCV Catchment	Catchment	P12	7.37737	80.47916	302
			Rubber R7 (1985)	Rubber - PSP	P13	7.37295	80.47549	306
		Nottinghill	Rubber R7 (2015)	Rubber - PSP	P14	7.38320	80.44753	253
			Rubber (2006)	Rubber - PSP	P15	7.38598	80.45212	225
			HCV Catchment 1988/1999	Catchment	P16	7.38715	80.45463	227
	Muwankanda	Upper	Cinchona HCV Forest	Forest - PSP	P17	7.41164	80.41724	296
			Stream near Cinchona field	Stream	P18	7.41185	80.41722	297
			HCV Catchment	Catchment	P19	7.41182	80.41672	340
			Stream R31	Stream	P27	7.41247	80.42043	229
			Stream R24/31	Stream	P28	7.41246	80.41742	323
			Stream R24	Stream	P29	7.41318	80.41805	308
			Rubber Old	Rubber - PSP	P30	7.40842	80.41595	333
		Moratenna	Conservation Forest	Forest - PSP	P31	7.40703	80.40401	510
			Cinnamon	Cinnamon - PSP	P32	7.41014	80.40248	430
		Lower	Rubber R38	Rubber - PSP	P33	7.39821	80.42891	171

Group	Estate	Division	Site	Site type	Site code	Latitude	Longitude	Elevation (m)
			Coconut C14	Coconut - PSP	P34	7.40063	80.43235	170
			Rubber Young	Rubber - PSP	P35	7.39872	80.42391	162
	Keppetigala	Galagama	HCV Catchment 2014	Catchment	P20	7.43779	80.54642	385
			Coconut 1994	Coconut - PSP	P21	7.44087	80.54055	367
			Rubber 1989	Rubber - PSP	P22	7.44035	80.53996	341
			Stream R 34	Stream	P23	7.46094	80.51584	256
		Malabe	HCV Catchment 2011	Catchment	P24	7.46248	80.51562	298
			Conservation Forest	Forest - PSP	P25	7.44549	80.50720	284
			Rubber 2003	Rubber - PSP	P26	7.44574	80.50820	262
Sapumalkanda	Sapumalkanda	Walpola	2016 OP 1/2, 2007 R/2016 OP	Spring and Stream	D1	6.97562	80.30634	197
			Rubber 2007	Rubber - PSP	D2	6.97785	80.30693	221
			2016 OP 2	Oil palm - PSP	D3	6.97860	80.30522	235
			Rubber 1996	Rubber - PSP	D4	6.97670	80.30750	225
			OP 2018	Spring	D5	6.98180	80.31049	253
		Sapumalkanda Upper	Conservation Forest/Rusty spotted cat HCV	Forest - PSP	D6	6.97421	80.32144	222
			Effluent treatment plant	Stream	D7	6.97505	80.30421	199
			Tea T4	Tea - PSP	D8	6.97429	80.30536	213
			2020 OP	Oil palm	D9	6.97309	80.31071	294
			Duriyan block	Duriyan/Catchment	D10	6.97289	80.31261	248
	Rubber 1999		Spring	D11	6.97187	80.31467	243	
	Clunes Upper	Rubber 2004	Stream	D12	6.97523	80.29927	181	
		Rubber 2004	Rubber - PSP	D13	6.92720	80.29718	195	
		Cinnamon	Cinnamon - PSP	D14	6.98116	80.30210	259	
	Reucastle	Nahelma	Timber - Toraliyana	Timber - PSP	D17	6.90457	80.30812	305
			Oil Palm 2018	Oil palm - PSP	D18	6.90568	80.30927	270
			Bulath Hapaya HCV	Stream	D19	6.91357	80.31154	207
			2000 Rubber / 2020 OP	Stream	D21	6.92147	80.31140	117
		Reucastle	Rubber 2005 HCV catchment	Catchment	D20	6.91972	80.30754	201

Group	Estate	Division	Site	Site type	Site code	Latitude	Longitude	Elevation (m)	
			Rubber 2008	Rubber - PSP	D22	6.92178	80.31202	129	
			OP 1	Spring	D24	6.95422	80.29966	141	
			Conservation forest	Forest - PSP	D25	6.93195	80.29662	232	
			1995 Catchment area	Spring	D26	6.93302	80.29702	224	
			Rubber 1995	Rubber - PSP	D27	6.93492	80.29679	264	
			Rusty spotted cat HCV 1998	Riverine	D28	6.93114	80.30683	105	
			Rubber 2020	Stream	D29	6.93151	80.30463	74	
				Spring	D30	6.94265	80.30439	140	
		Digala Upper	Timber - Albizia	Timber - PSP	D23	6.95657	80.29306	165	
		Digala Lower	OP 2	Stream	D31	6.95403	80.31055	141	
			OP1/OP2/Spotted Deer HCV	Spring and Stream	D32	6.95129	80.30610	231	
			2007 Rubber/Cinnamon HCV	Spring	D33	6.95669	80.30652	187	
		Illukthenna	Udahenkanda	Muthupana Ella HCV	Spring	D15	6.93111	80.32018	155
			Illukthenna	Cinnamon	Stream	D16	6.95041	80.32580	145
	Rubber 2020			Rubber - PSP	D34	6.94132	80.32658	207	
	Rubber Young			Rubber - PSP	D35	6.94707	80.31948	303	
	Rubber Mature			Rubber - PSP	D36	6.94671	80.31904	305	
Rubber Old	Rubber - PSP			D37	6.93318	80.32459	114		
Conservation Forest	Forest - PSP			D38	6.94440	80.32592	197		
Cinnamon 2020	Cinnamon - PSP			D70	6.93516	80.33096	142		
Udabage	Udabage	Lower	Ruber 1989/ OP 13	Stream	D39	6.95647	80.33347	166	
			Rubber 1999	Rubber - PSP	D40	6.95211	80.34207	248	
			Rubber 2007	Rubber - PSP	D41	6.95749	80.34232	272	
				Stream		6.96437	80.33081	154	
		Middle	Rubber 1990 HCV springs	Spring	D42	6.95548	80.33853	264	
			Rubber 1993	Rubber - PSP	D43	6.96539	80.33842	237	
		Upper	Rubber 2004 HCV spring	Spring	D44	6.95841	80.35275	346	
	Conservation Forest		Forest - PSP	D45	6.95562	80.36201	340		

Group	Estate	Division	Site	Site type	Site code	Latitude	Longitude	Elevation (m)	
			Marsh	Marsh		6.95629	80.35425	305	
	Eila	Avington	Rubber 2008	Rubber - PSP	D46	6.98013	80.33549	262	
			Rubber 2008/2019	Stream	D47	6.98034	80.33296	216	
			Malhasna	Rubber 2021 (Prev. 1993)	Rubber - PSP	D48	6.98575	80.33749	177
		Rubber 2004 HCV		Spring	D49	6.98444	80.33917	200	
		Rubber 2018 HCV spring		Spring	D51	6.98172	80.34787	225	
		Rubber 2006		Rubber - PSP	D52	6.98468	80.34538	251	
		Eila	Conservation Forest	Forest - PSP	D50	6.98543	80.33765	137	
			Ice Peella	Spring	D53	6.98390	80.34334	254	
			Forest and cave above R2019	Forest - PSP and cave	D54	6.98644	80.33984	236	
			Rubber 1989 HCV spring	Spring	D55	6.99358	80.33846	145	
			Rubber 2015 HCV spring	Spring	D56	6.99389	80.33432	106	
		Udapola	Udapola	Cinnamon 2019	Spring	D57	6.90169	80.34709	161
				Tea 1993	Tea - PSP	D58	6.90470	80.34222	125
				Rubber 1999 HCV spring	Spring	D59	6.91936	80.34162	108
				Rubber 2007 HCV spring	Spring	D60	6.91100	80.34648	107
	Paladeniya Ela			Stream	D61	6.91345	80.34786	86	
	Paladeniya Cinnamon HCV			Spring	D62	6.91158	80.35371	164	
	Yatapola		Rubber 2000/2012 HCV spring	Spring	D63	6.89167	80.34785	158	
			Rubber 1999	Spring	D64	6.88925	80.34959	165	
			Rubber 2000/1999 HCV spring	Spring	D65	6.88918	80.34776	134	
			Rubber 2000 HCV spring	Spring	D66	6.89195	80.34925	218	
			Rubber 1997	Spring	D67	6.88264	80.35426	281	
			Rubber 1987 HCV spring	Spring	D68	6.87484	80.35646	347	
			Rubber 1987 HCV spring	Spring	D69	6.87484	80.35760	390	
	Mawaththanne		Rubber 2008	Stream	D90	6.90264	80.33451	261	
			Rubber 1999 HCV Spring	Spring	D91	6.89749	80.33481	260	
		Rubber 2006 HCV Spring	Spring	D92	6.89513	80.33543	262		

Group	Estate	Division	Site	Site type	Site code	Latitude	Longitude	Elevation (m)	
			Rubber 2010 HCV Spring	Spring	D93	6.88812	80.33723	216	
			Rubber 1998 HCV Spring	Spring	D94	6.88603	80.34411	166	
			Conservation Forest	Forest - PSP	D107	6.90005	80.33483	272	
			Rubber 1999	Rubber - PSP	D108	6.89883	80.33450	261	
		Mannikkanda	Rubber 2008	Rubber - PSP	D109	6.87541	80.33877	190	
			OP4	Oil palm - PSP	D110	6.87688	80.34347	302	
			OP5	Stream	D111	6.87360	80.34441	269	
			Rubber 2007 HCV Stream	Stream	D95	6.88247	80.33892	224	
			Rubber 2011 HCV Stream	Stream	D96	6.87874	80.33904	198	
			Miyawita	Dabar	Dabar	Timber - Albizia	Timber - PSP	D71	6.89762
Kambili Oya	Riverine	D72				6.89858	80.38831	188	
Rubber 2012	Rubber - PSP	D73				6.90253	80.38528	208	
Rubber 2007	Rubber - PSP	D74				6.89339	80.38799	307	
Panakura	PK RI/7A	Rubber - PSP		D75	6.91395	80.38549	189		
Miyawita		Kosgahakanda		Kosgahakanda HCV	Forest - PSP	D97	6.85391	80.37822	382
				Tea/02	Tea - PSP	D100	6.87089	80.37740	333
				Terpentine	Timber - PSP	D101	6.87184	80.37593	340
				R/01	Stream	D102	6.86726	80.37381	249
				Kosgahakanda HCV	Forest - PSP new	D106	6.85864	80.37586	321
		Asamanakanda		R01	Stream	D98	6.85500	80.38764	505
				R02	Stream	D99	6.85113	80.38618	616
				East	R01	Stream	D103	6.88546	80.35949
		R06			Stream	D104	6.88626	80.35977	165
		Rubber 2011	Rubber - PSP		D105	6.88448	80.36251	195	
Mahaoya	Woodend	Nugahena	Coconut	Coconut - PSP	D76	6.86428	80.28613	193	
			Alstonia	Timber - PSP	D77	6.86566	80.28960	259	
			Rubber 2012	Rubber - PSP	D78	6.86662	80.29028	264	
			Rubber	Rubber - PSP	D79	6.86362	80.29523	249	

Group	Estate	Division	Site	Site type	Site code	Latitude	Longitude	Elevation (m)
			HCV Forest	Forest - PSP	D80	6.86441	80.29555	228
		Thalapitiya	Cinnamon 1982	Cinnamon - PSP	D81	6.87647	80.28432	139
		Rangegama	2013/2006/2005	Stream	D82	6.89539	80.25675	126
		Woodend	Tea T1 B block	Tea - PSP	D83	6.90700	80.26907	54
			Rubber 2008	Stream	D84	6.90307	80.26949	53
			Weli Muwa HCV	Forest	D85	6.89891	80.26923	166
		Yogama	Rubber 2004	Rubber - PSP	D86	6.90988	80.26932	48
			HCV 2008	Spring	D87	6.91878	80.26308	168
			Op 2016	Oil palm - PSP	D88	6.91882	80.26125	181
			Op 2016	Spring	D89	6.91792	80.26056	187
	Mahaoya	Mahaoya	Coconut between 1998/1997	Coconut - PSP	D112	6.96470	80.27645	40
			Rubber 1997 HCV	Catchment	D113	6.96125	80.27967	83
			Rubber 2011	Rubber - PSP	D114	6.96666	80.29028	152
			Rubber 2005	Rubber - PSP	D115	6.96378	80.29135	102
			Rubber 1989 - Uprooted	Rubber - PSP	D116	6.96390	80.29067	108
			HCV Spring 2013	Spring	D117	6.97005	80.27433	73
		Ernen	Conservation Forest	Forest - PSP	D118	6.94008	80.25925	106
			Rubber 2014 HCV	Catchment	D119	6.94232	80.25935	92
			Rubber 2014/1990/1998	Stream	D120	6.94362	80.26339	85
			Rubber 1987 - Uprooted	Rubber - PSP	D121	6.93815	80.26418	109
		Glasel	Rubber 2001/2006/2008 Stream	Stream	D122	6.93050	80.26384	57
			Rubber 1983 HCV Spring	Spring	D123	6.93145	80.26046	96
			Rubber 1990 HCV spring	Spring	D124	6.93256	80.25692	140
		Densworth	Densworth	Rubber 1989 / Rubber 2021	Rubber - PSP	D125	6.94471	80.27631
	OP1			Oil palm - PSP	D126	6.94432	80.27803	53
	2010/2012/2017 OP HCV Stream			Stream	D127	6.94360	80.27984	38

Group	Estate	Division	Site	Site type	Site code	Latitude	Longitude	Elevation (m)
			Conservation Forest/Rusty spotted cat HCV/Rubber 1971 HCV Catchment	Forest - PSP	D128	6.94237	80.28410	127
			Rubber 2000	Rubber - PSP	D129	6.94406	80.28336	79
			Rubber 2010	Rubber - PSP	D130	6.94400	80.28194	72
			Rubber 2002/2004/2012 Stream	Stream	D131	6.94390	80.28737	52

Annex 2a. The list of plant species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **TS** - Threat Status; **CR** - Critically Endangered; **CR(PE)** - Critically Endangered possible Extinct; **DD** - Data Deficient; **EN** – Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** – Vulnerable. Recorded in 2016 assessment, New Records from 2021/2022 assessment.

Family	Scientific Name	Common Name	DS	TS
Acanthaceae	<i>Asystasia gangetica</i>	පුරුක්	Native	LC
Acanthaceae	<i>Asystasia variabilis</i>	ගඳ පුරුක්	Native	LC
Acanthaceae	<i>Barleria arnotiana</i> var. <i>arnotiana</i>		Native	EN
Acanthaceae	<i>Barleria courtallica</i>		Native	CR
Acanthaceae	<i>Barleria vestita</i>		Native	VU
Acanthaceae	<i>Ecbolium ligustrinum</i>	එක්වැරණිය	Native	LC
Acanthaceae	<i>Hygrophila ringens</i>	නිල් පුරුක්	Native	LC
Acanthaceae	<i>Lepidagathis fasciculata</i>		Native	LC
Acanthaceae	<i>Nicoteba betonica</i>	සුදු පුරුක්	Native	LC
Acanthaceae	<i>Phaulopsis dorsiflora</i>		Native	NT
Acanthaceae	<i>Rostellularia procumbens</i>	මයානි	Native	LC
Acanthaceae	<i>Ruellia prostrata</i>	නිල් පුරුක්	Native	LC
Acanthaceae	<i>Rungia latior</i>	ගොඩ පුරුක්	Native	VU
Acanthaceae	<i>Strobilanthes adenophora</i>	නෙළු	Endemic	VU
Acanthaceae	<i>Strobilanthes lupulina</i>	නෙළු	Native	LC
Acanthaceae	<i>Strobilanthes thwaitesii</i>	නෙළු	Endemic	CR
Acanthaceae	<i>Strobilanthes zeylanica</i>	නෙළු	Endemic	VU
Acanthaceae	<i>Thunbergia alata</i>		Exotic	NE
Acanthaceae	<i>Thunbergia grandiflora</i>		Exotic	NE
Achariaceae	<i>Erythrospermum zeylanicum</i>	දොඩන්වැන්න, දොඩම්පතා	Endemic	LC
Achariaceae	<i>Hydnocarpus venenatus</i>	මකුල්ල	Endemic	LC
Amaranthaceae	<i>Achyranthes aspera</i>	කරල් හැබ	Native	LC
Amaranthaceae	<i>Amaranthus blitum</i>	තම්පලා	Exotic	NE
Amaranthaceae	<i>Amaranthus viridis</i>	කූර තම්පලා	Exotic	NE

Family	Scientific Name	Common Name	DS	TS
Amaranthaceae	<i>Cyathula prostrata</i>	බිම් කරල් හැබ	Native	VU
Amaranthaceae	<i>Gomphrena globosa</i>	රාජ පොහොව්වු	Exotic	NE
Amaranthaceae	<i>Ouret lanata</i>	පොල්පලා	Native	LC
Amaryllidaceae	<i>Hippeastrum puniceum</i>	වල් ඵූණු	Exotic	NE
Anacardiaceae	<i>Anacardium occidentale</i>	කජු	Exotic	NE
Anacardiaceae	<i>Camptosperma zeylanicum</i>	ආර්ද්ද	Endemic	LC
Anacardiaceae	<i>Lanea coromandelica</i>	හික්	Native	LC
Anacardiaceae	<i>Mangifera indica</i>	අඹ	Exotic	NE
Anacardiaceae	<i>Mangifera zeylanica</i>	අඹ	Endemic	LC
Anacardiaceae	<i>Nothopegia beddomei</i>	බල	Native	LC
Anacardiaceae	<i>Semecarpus gardneri</i>	උයන් බදුල්ල	Endemic	LC
Anacardiaceae	<i>Semecarpus marginata</i>		Endemic	NT
Anacardiaceae	<i>Spondias pinnata</i>	වල් ඇඹරුල්ලා	Exotic	DD
Ancistrocladaceae	<i>Ancistrocladus hamatus</i>	ගෝන වැල්	Endemic	VU
Anisophylleaceae	<i>Anisophyllea cinnamomoides</i>	වැලිපැන්න	Endemic	NT
Annonaceae	<i>Annona muricata</i>	කටු අනෝදා	Exotic	NE
Annonaceae	<i>Annona reticulata</i>	වැලි ආන්නා	Exotic	NE
Annonaceae	<i>Artabotrys hexapetalus</i>	යකඩ වැල්	Native	VU
Annonaceae	<i>Artabotrys zeylanicus</i>	කළු බඹර වැල්	Native	LC
Annonaceae	<i>Cyathocalyx zeylanicus</i>	ඊපෙන්න, කෙකල, කොටල	Native	LC
Annonaceae	<i>Desmos elegans</i>	කුඩුමිරිස්ස	Endemic	EN
Annonaceae	<i>Goniothalamus gardneri</i>	හීන් කැර	Native	VU
Annonaceae	<i>Huberantha korinti</i>	මීවැන්න, උල්කොන්ද	Native	LC
Annonaceae	<i>Miliusa indica</i>	කැකිලි මැස්ස	Native	LC
Annonaceae	<i>Monoon acuminatum</i>	ඉනිපෙන්න, ඉපෙන්න, මලොළ, මල් ලාචුළු	Endemic	LC
Annonaceae	<i>Polyalthia suberosa</i>	කලටි	Native	VU
Annonaceae	<i>Uvaria semecarpifolia</i>	කර බඹර	Endemic	LC
Annonaceae	<i>Uvaria sphenocarpa</i>		Endemic	LC

Family	Scientific Name	Common Name	DS	TS
Annonaceae	<i>Uvaria zeylanica</i>	පලංග, පලු කන්	Native	LC
Annonaceae	<i>Xylopia championii</i>	දන්කැටිය	Endemic	LC
Annonaceae	<i>Xylopia patoniae</i>	අතුකැටිය, නැටවු	Native	LC
Apiaceae	<i>Centella asiatica</i>	ගොටුකොළ	Native	LC
Apocynaceae	<i>Allamanda cathartica</i>	වැල් රැක් අත්තන	Exotic	NE
Apocynaceae	<i>Alstonia macrophylla</i>	හවර් නූග	Exotic	NE
Apocynaceae	<i>Alstonia scholaris</i>	රැක් අත්තන	Native	LC
Apocynaceae	<i>Anodendron parviflorum</i>	දුල්, ගැරඹි දුල්	Native	VU
Apocynaceae	<i>Cerbera odollam</i>	ගොන් කදුරු	Native	LC
Apocynaceae	<i>Chonemorpha fragrans</i>	බු වැල් අඟුණ, බු කිරි වැල්, එළ වැල් අඟුණ	Native	VU
Apocynaceae	<i>Ichnocarpus frutescens</i>	කිරි වැල්	Native	LC
Apocynaceae	<i>Rauvolfia serpentina</i>	ඒකාවේරිය	Native	EN
Apocynaceae	<i>Tabernaemontana dichotoma</i>	දිවි කදුරු	Endemic	LC
Apocynaceae	<i>Wrightia angustifolia</i>	මා ඉද්ද	Endemic	LC
Apocynaceae	<i>Cryptolepis dubia</i>	වැල් රැක් අත්තන, කිරි වැල්	Native	VU
Apocynaceae	<i>Gymnema sylvestre</i>	මස් බැද්ද, බිම් නූග	Native	VU
Apocynaceae	<i>Hemidesmus indicus</i>	හීන් ඉරමුසු, ඉරමුසු	Native	LC
Apocynaceae	<i>Wattakaka volubilis</i>	අඟුණ	Native	LC
Araceae	<i>Alocasia cucullata</i>	ගහල	Exotic	NE
Araceae	<i>Alocasia macrorrhizos</i>	හබරල	Exotic	NE
Araceae	<i>Caladium bicolor</i>		Exotic	NE
Araceae	<i>Colocasia esculenta</i>	ගහල	Native	LC
Araceae	<i>Dieffenbachia seguine</i>		Exotic	NE
Araceae	<i>Lagenandra ovata</i>	කෙටෙල, වැනුල	Native	LC
Araceae	<i>Lagenandra thwaitesii</i>	කෙටෙල	Endemic	EN
Araceae	<i>Lasia spinosa</i>	කොහිල	Native	LC
Araceae	<i>Pothos hookeri</i>		Endemic	VU
Araceae	<i>Pothos scandens</i>	පෝවා වැල්	Native	LC

Family	Scientific Name	Common Name	DS	TS
Araceae	<i>Syngonium angustatum</i>	වැල් කොහිල	Exotic	NE
Araliaceae	<i>Schefflera emarginata</i>	හීන් ඉන්න වැල්	Endemic	VU
Araliaceae	<i>Schefflera stellata</i>	ඉන්න	Native	LC
Arecaceae	<i>Areca catechu</i>	පුවක්	Exotic	NE
Arecaceae	<i>Areca triandra</i>		Exotic	NE
Arecaceae	<i>Calamus thwaitesii</i>	මා වේ වැල්	Native	VU
Arecaceae	<i>Calamus zeylanicus</i>	තම්බොටු වැල්	Endemic	EN
Arecaceae	<i>Caryota urens</i>	කිතුල්	Native	LC
Arecaceae	<i>Cocos nucifera</i>	පොල්, තැඹිලි, තෙරළ	Exotic	NE
Arecaceae	<i>Elaeis guineensis</i>	කටු පොල්	Exotic	NE
Arecaceae	<i>Oncosperma fasciculatum</i>	කටු කිතුල්	Endemic	VU
Aristolochiaceae	<i>Aristolochia indica</i>	සප්පද	Native	LC
Aristolochiaceae	<i>Aristolochia ringens</i>	ගුරුළු රාජ	Exotic	NE
Aristolochiaceae	<i>Thottea siliquosa</i>	තාපසර බුලන්	Native	LC
Asparagaceae	<i>Asparagus racemosus</i>	හානවාරිය, හීන් හානවාරිය	Native	LC
Asparagaceae	<i>Ophiopogon intermedius</i>		Native	LC
Asparagaceae	<i>Asparagus falcatus</i>	හානවාරිය	Native	LC
Asparagaceae	<i>Dracaena thwaitesii</i>	වෙඩිකොකා ගස්	Native	LC
Asparagaceae	<i>Dracaena zeylanica</i>	නියද	Native	NT
Asphodelaceae	<i>Dianella ensifolia</i>	මොණර පෙනන්	Native	LC
Asteraceae	<i>Acmella uliginosa</i>	හීන් අක්මැල්ල	Native	LC
Asteraceae	<i>Ageratum conyzoides</i>	හුලන්තලා	Exotic	NE
Asteraceae	<i>Austroeupatorium inulifolium</i>		Exotic	NE
Asteraceae	<i>Bidens pilosa</i>	වැල් තේ කොළ	Exotic	NE
Asteraceae	<i>Centratherum punctatum</i>		Exotic	NE
Asteraceae	<i>Chromolaena odorata</i>	පොඩි සිඤ්ඤාමරන්	Exotic	NE
Asteraceae	<i>Crassocephalum crepidioides</i>		Exotic	NE
Asteraceae	<i>Cyanthillium cinereum</i>	මොණරකුඩුමිටිය	Native	LC
Asteraceae	<i>Elephantopus scaber</i>	අන් අඩි, ගොඩිච්චි	Native	LC

Family	Scientific Name	Common Name	DS	TS
Asteraceae	<i>Eleutheranthera ruderalis</i>		Exotic	NE
Asteraceae	<i>Emilia exserta</i>	හුලන්නලා, කඩුපහර	Native	LC
Asteraceae	<i>Emilia sonchifolia</i>	කඩුපහර	Native	LC
Asteraceae	<i>Erigeron bonariensis</i>	සුදන	Exotic	NE
Asteraceae	<i>Erigeron karvinskianus</i>		Exotic	NE
Asteraceae	<i>Mikania cordata</i>	වතු පාලි	Exotic	NE
Asteraceae	<i>Sphagneticola trilobata</i>	උදය කුමාරි	Exotic	NE
Asteraceae	<i>Struchium sparganophorum</i>		Exotic	NE
Asteraceae	<i>Tithonia diversifolia</i>	වල් සුරියකාන්ත	Exotic	NE
Balsaminaceae	<i>Impatiens flaccida</i>	කුඩලි	Native	NT
Balsaminaceae	<i>Impatiens repens</i>	ගල් දෙමට	Endemic	EN
Begoniaceae	<i>Begonia cordifolia</i>	ගල් ඇඹල	Native	VU
Begoniaceae	<i>Begonia hirtella</i>	හක් ඇඹල	Exotic	NE
Bignoniaceae	<i>Crescentia cujete</i>	රම්	Exotic	NE
Bignoniaceae	<i>Oroxylum indicum</i>	තොටිල	Native	LC
Bignoniaceae	<i>Spathodea campanulata</i>	කුඩැල්ල ගස්	Exotic	NE
Brassicaceae	<i>Cardamine hirsuta</i>		Native	DD
Bromeliaceae	<i>Ananas comosus</i>	අන්නාසි	Exotic	NE
Bromeliaceae	<i>Bromelia pinguin</i>	කටු අන්නාසි, වැට අන්නාසි	Exotic	NE
Burmanniaceae	<i>Burmattia pusilla</i>		Native	NT
Burseraceae	<i>Canarium zeylanicum</i>	කැකුණ	Endemic	VU
Calophyllaceae	<i>Calophyllum acidus</i>	කීන, දෙහි කීන, බටු කීන	Endemic	VU
Calophyllaceae	<i>Calophyllum inophyllum</i>	දොඹ	Native	LC
Calophyllaceae	<i>Mesua ferrea</i>	තා, තාග	Native	LC
Calophyllaceae	<i>Mesua thwaitesii</i>	දිය තා	Endemic	LC
Campanulaceae	<i>Hippobroma longiflora</i>		Exotic	NE
Campanulaceae	<i>Lobelia alsinoides</i> var. <i>alsinoides</i>	පෙනිවිල	Native	LC
Campanulaceae	<i>Lobelia zeylanica</i>		Native	LC
Cannabaceae	<i>Celtis philippensis</i>	මැදිතැල්ල	Native	LC

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Cannabaceae	<i>Celtis timorensis</i>	ගුරුන්ද, ගුරුන්ද	Native	LC
Cannabaceae	<i>Trema orientale</i>	ගැඹුඹ	Native	LC
Caricaceae	<i>Carica papaya</i>	ගස් ලබු, පැපොල්	Exotic	NE
Celastraceae	<i>Microtropis wallichiana</i>	හීන්හැරු	Native	LC
Centroplacaceae	<i>Bhesa ceylanica</i>	පෙලන්	Endemic	LC
Cleomaceae	<i>Cleome rutidosperma</i>		Native	LC
Clusiaceae	<i>Garcinia hermonii</i>	මහ මඩොල්, කන ගොරකා	Endemic	NT
Clusiaceae	<i>Garcinia mangostana</i>	මංගුස්	Exotic	NE
Clusiaceae	<i>Garcinia quaesita</i>	ගොරකා, රන් ගොරකා, කන ගොරකා	Endemic	LC
Colchicaceae	<i>Gloriosa superba</i>	නියඟලා	Native	LC
Combretaceae	<i>Combretum ovalifolium</i>	කදුරු කැටිය වැල්	Native	NT
Combretaceae	<i>Terminalia arjuna</i>	කුඹුක්	Native	LC
Combretaceae	<i>Terminalia catappa</i>	කොට්ටම්බා	Exotic	NE
Combretaceae	<i>Terminalia zeylanica</i>	හම්පලද	Native	NT
Commelinaceae	<i>Commelina benghalensis</i>	දිය මෙතේරිය	Native	LC
Commelinaceae	<i>Commelina clavata</i>	ගිරා පළා	Native	VU
Commelinaceae	<i>Commelina diffusa</i>	ගිරා පළා, තණ පළා	Native	LC
Commelinaceae	<i>Commelina indehiscens</i>	ගිරා පළා	Native	NT
Commelinaceae	<i>Murdannia loriformis</i>		Native	VU
Commelinaceae	<i>Murdannia spirata</i> var. <i>spirata</i>		Native	LC
Connaraceae	<i>Connarus championii</i>	වැල් රදලිය	Endemic	NT
Connaraceae	<i>Rourea minor</i>	ගොඩ කිරිදි, කිරිදි වැල්	Native	LC
Convolvulaceae	<i>Argyreia kleiniana</i>	ගිරිනිල්ල	Native	LC
Convolvulaceae	<i>Argyreia thwaitesii</i>	මා බද, ගිරිනිල්ල	Endemic	LC
Convolvulaceae	<i>Bonamia semidigyna</i>	බු වස තෙල් කොළ	Native	EN
Convolvulaceae	<i>Camonea pilosa</i>	කිරි මදු, මහ මදු	Native	LC
Convolvulaceae	<i>Xenostegia tridentata</i>	හවරි මදු, හීන් මදු	Native	LC
Cornaceae	<i>Alangium glandulosum</i>	රක් අඟුණ, අලඟ	Native	VU

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Costaceae	<i>Costus afer</i>		Exotic	NE
Costaceae	<i>Hellenia speciosa</i>	නෙඹු	Native	LC
Crassulaceae	<i>Kalanchoe pinnata</i>	අක්කපාන	Exotic	NE
Crypteroniaceae	<i>Axinandra zeylanica</i>	පොල් හූන	Endemic	NT
Cucurbitaceae	<i>Momordica charantia</i>	බටු කරවිල	Native	LC
Cucurbitaceae	<i>Zanonia indica</i>	වල් රසකිඳු	Native	VU
Cyperaceae	<i>Cyperus rotundus</i>	කලාදුරු මහ කලාදුරු	Native	LC
Dichapetalaceae	<i>Dichapetalum gelonioides</i>	බලු නකුට	Native	LC
Dilleniaceae	<i>Acrotrema dissectum</i>		Endemic	CR
Dilleniaceae	<i>Acrotrema uniflorum</i>	සින් බෙරු	Native	NE
Dilleniaceae	<i>Acrotrema walkeri</i>	බින් බෙරු උල්වැරණි	Endemic	VU
Dilleniaceae	<i>Dillenia indica</i>	හොඬපර, වම්පර	Native	LC
Dilleniaceae	<i>Dillenia retusa</i>	ගොඬපර	Native	LC
Dilleniaceae	<i>Dillenia suffruticosa</i>	පර	Exotic	NE
Dilleniaceae	<i>Dillenia triquetra</i>	දියපර	Native	LC
Dilleniaceae	<i>Schumacheria castaneifolia</i>	මහ කැකිරිවරා	Endemic	LC
Dilleniaceae	<i>Tetracera sarmentosa</i>	කොරොස වැල්	Native	LC
Dioscoreaceae	<i>Dioscorea oppositifolia</i>	හිරිතල	Native	NT
Dioscoreaceae	<i>Dioscorea pentaphylla</i>	කටු අල	Native	LC
Dioscoreaceae	<i>Trichopus zeylanicus</i>	බිම් පොල්	Native	VU
Ebenaceae	<i>Diospyros insignis</i>	ගෝන, පොරොව මාර, වල් මැදිරිය	Native	LC
Ebenaceae	<i>Diospyros koenigii</i>		Endemic	CR
Ebenaceae	<i>Diospyros toposia</i>	කළු වැල්ල, කහ කැල	Native	VU
Elaeocarpaceae	<i>Elaeocarpus glandulifer</i>	ගල් වෙරළ	Endemic	NT
Elaeocarpaceae	<i>Elaeocarpus serratus</i>	වෙරළ	Native	LC
Elaeocarpaceae	<i>Elaeocarpus subvillosus</i>	ගල් වෙරළ	Endemic	NT
Eriocaulaceae	<i>Eriocaulon thwaitesii</i>		Native	VU
Erythroxylaceae	<i>Erythroxylum obtusifolium</i>	දොඬම්පතා	Native	LC
Euphorbiaceae	<i>Acalypha indica</i>	කුප්පමේනිය	Native	LC

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Euphorbiaceae	<i>Agrostistachys borneensis</i>	හොඳ බෙරු	Native	LC
Euphorbiaceae	<i>Agrostistachys indica</i>	දත් වැන්න	Native	LC
Euphorbiaceae	<i>Croton aromaticus</i>	වැල් කැප්පෙටියා	Native	LC
Euphorbiaceae	<i>Croton hirtus</i>	ගං වෙද	Exotic	NE
Euphorbiaceae	<i>Euphorbia antiquorum</i>	දළක්, දල නගු	Native	LC
Euphorbiaceae	<i>Euphorbia heterophylla</i>	කැපුම්කීරිය	Exotic	NE
Euphorbiaceae	<i>Euphorbia hirta</i>	බු දද කීරිය, කිරි නලා	Exotic	NE
Euphorbiaceae	<i>Euphorbia thymifolia</i>	බිම් දද කීරිය	Exotic	NE
Euphorbiaceae	<i>Hevea brasiliensis</i>	රබර්	Exotic	NE
Euphorbiaceae	<i>Homonoia riparia</i>	සමනම	Native	NT
Euphorbiaceae	<i>Jatropha curcas</i>	රට එඬරු, වැට එඬරු	Exotic	NE
Euphorbiaceae	<i>Macaranga indica</i>	බු කැන්ද	Native	LC
Euphorbiaceae	<i>Macaranga peltata</i>	කැන්ද	Native	LC
Euphorbiaceae	<i>Mallotus eriocarpus</i>	බුළු පෙන්න	Native	LC
Euphorbiaceae	<i>Mallotus philippensis</i>	හම්පිල්ල	Native	LC
Euphorbiaceae	<i>Mallotus repandus</i>	වැල් කැප්පෙටියා	Native	LC
Euphorbiaceae	<i>Mallotus rhamnifolius</i>	මෝල් ඇබේ	Native	LC
Euphorbiaceae	<i>Mallotus tetracoccus</i>	බු කැන්ද	Native	LC
Euphorbiaceae	<i>Manihot carthagenensis</i> subsp. <i>glaziovii</i>	ගස් මඤ්ඤොක්කා	Exotic	NE
Euphorbiaceae	<i>Manihot esculenta</i>	මඤ්ඤොක්කා	Exotic	NE
Euphorbiaceae	<i>Suregada lanceolata</i>		Native	LC
Euphorbiaceae	<i>Tragia hispida</i>	වැල් කහඹිලියා	Native	LC
Fabaceae	<i>Abrus precatorius</i>	ඔළිද	Native	LC
Fabaceae	<i>Adenanthera pavonina</i>	මදටිය, මංවාඩි	Native	LC
Fabaceae	<i>Albizia chinensis</i>	හුලන් මාර, කබල් මාර	Native	VU
Fabaceae	<i>Albizia lebeck</i>	මාර, සූරිය මාර, විෂ නෂ්ණ	Native	NT
Fabaceae	<i>Albizia odoratissima</i>	හුරිය, සූරිය මාර, හුරි මාර	Native	LC
Fabaceae	<i>Arachis pintoi</i>		Exotic	NE
Fabaceae	<i>Archidendron bigeminum</i>	කලටිය	Native	VU

Family	Scientific Name	Common Name	DS	TS
Fabaceae	<i>Calliandra houstoniana</i>		Exotic	NE
Fabaceae	<i>Calopogonium mucunoides</i>		Exotic	NE
Fabaceae	<i>Centrosema pubescens</i>		Exotic	NE
Fabaceae	<i>Crotalaria laburnifolia</i>	යක් බේරිය	Native	LC
Fabaceae	<i>Crotalaria micans</i>		Exotic	NE
Fabaceae	<i>Crotalaria retusa</i>	කහ අඩනහිරිය	Native	LC
Fabaceae	<i>Dalbergia rostrata</i>	බඹර වැල්	Native	LC
Fabaceae	<i>Derris canarensis</i>	කළු කල වැල්, දිය කල වැල්	Native	NT
Fabaceae	<i>Entada rheedei</i>	මහ පුස් වැල්	Native	NT
Fabaceae	<i>Falcataria falcata</i>	මාර, රට මාර	Exotic	NE
Fabaceae	<i>Flemingia macrophylla</i>	වල් උදු	Native	CR
Fabaceae	<i>Gliricidia sepium</i>	වැටමාර	Exotic	NE
Fabaceae	<i>Grona heterocarpa</i>	ඇන් උදුපියලිය	Native	VU
Fabaceae	<i>Grona heterophylla</i>	මහ උදුපියලිය	Native	LC
Fabaceae	<i>Grona triflora</i>	හීන් උදුපියලිය	Native	LC
Fabaceae	<i>Humboldtia laurifolia</i>	ගල් කරඳ	Endemic	LC
Fabaceae	<i>Leucaena leucocephala</i>	ඉපිල් ඉපිල්	Exotic	NE
Fabaceae	<i>Mezoneuron hymenocarpum</i>	ගොඩ වවුලැටිය, රන් කලබටු වැල්	Native	NT
Fabaceae	<i>Mimosa diplotricha</i> var. <i>diplotricha</i>	වැල් නිදිකුම්බා	Exotic	NE
Fabaceae	<i>Mimosa pudica</i>	නිදිකුම්බා	Exotic	NE
Fabaceae	<i>Mucuna bracteata</i>	මුකුණ	Exotic	NE
Fabaceae	<i>Neustanthus phaseoloides</i>	පෝර වැල්	Exotic	NE
Fabaceae	<i>Peltophorum pterocarpum</i>	අයවක	Exotic	NE
Fabaceae	<i>Pseudarthria viscida</i>	ගස් ගොනික	Native	LC
Fabaceae	<i>Pterocarpus indicus</i>	වල් ඇහැළ	Exotic	NE
Fabaceae	<i>Samanea saman</i>	පිනි මාර	Exotic	NE
Fabaceae	<i>Senegalia caesia</i>	හිඹුරු	Native	LC
Fabaceae	<i>Senegalia pennata</i>	ගොඩ හිඹුරු	Native	LC
Fabaceae	<i>Senna alata</i>	ඇන් තෝර	Exotic	NE

Family	Scientific Name	Common Name	DS	TS
Fabaceae	<i>Senna hirsuta</i>		Exotic	NE
Fabaceae	<i>Senna occidentalis</i>	පැණි තෝර, හිවල් තෝර	Exotic	NE
Fabaceae	<i>Senna spectabilis</i>	කහ කෝන	Exotic	NE
Fabaceae	<i>Senna tora</i>	පෙනි තෝර	Exotic	NE
Fabaceae	<i>Tamarindus indica</i>	සියඹලා	Exotic	NE
Fabaceae	<i>Vigna hosei</i>		Exotic	NE
Gesneriaceae	<i>Championia reticulata</i>		Endemic	EN
Gesneriaceae	<i>Rhynchoglossum notonianum</i>	දිය නිල්ල	Native	EN
Hydrocharitaceae	<i>Blyxa aubertii</i>	දිය හවරිය	Native	LC
Hypoxidaceae	<i>Curculigo orchioides</i>	බිම් තල්	Native	LC
Lamiaceae	<i>Clerodendrum chinense</i>		Exotic	NE
Lamiaceae	<i>Clerodendrum infortunatum</i>	ගස් පින්න, පින්න	Native	LC
Lamiaceae	<i>Clerodendrum paniculatum</i>	පින්න	Exotic	NE
Lamiaceae	<i>Clerodendrum speciosissimum</i>		Exotic	NE
Lamiaceae	<i>Coleus barbatus</i> var. <i>barbatus</i>	වල් කප්පරවල්ලිය	Native	NT
Lamiaceae	<i>Hyptis capitata</i>		Exotic	NE
Lamiaceae	<i>Leucas biflora</i>	විලඳවන්න	Native	LC
Lamiaceae	<i>Leucas zeylanica</i>	ගැට තුඹ	Native	LC
Lamiaceae	<i>Mesosphaerum suaveolens</i>	අලි තල	Exotic	NE
Lamiaceae	<i>Ocimum americanum</i>	හීන් තලා	Native	LC
Lamiaceae	<i>Orthosiphon aristatus</i>		Exotic	NE
Lamiaceae	<i>Rothea serrata</i>	කන් හැන්ද	Native	LC
Lamiaceae	<i>Salvia misella</i>		Exotic	NE
Lamiaceae	<i>Tectona grandis</i>	තෝකික	Exotic	NE
Lamiaceae	<i>Vitex altissima</i>	මිල්ල	Native	NT
Lauraceae	<i>Cinnamomum dubium</i>	සෙවෙල් කුරඳු	Native	NT
Lauraceae	<i>Cinnamomum verum</i>	කුරඳු, පත් කුරඳු	Endemic	VU
Lauraceae	<i>Cryptocarya membranacea</i>	තව්වන්න, ගල් මොර	Native	VU
Lauraceae	<i>Cryptocarya wightiana</i>	ගල් මොර, ගුළු මොර	Native	NT

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Lauraceae	<i>Litsea glutinosa</i>	බෝම්බි, බෝම්	Native	LC
Lauraceae	<i>Litsea longifolia</i>	රන් කැලිය	Endemic	DD
Lauraceae	<i>Neolitsea cassia</i> var. <i>cassia</i>	දවුල් කුරුඳු	Native	LC
Lauraceae	<i>Persea americana</i>	අලිගැට පේර, අලි පේර, ඇන් පේර	Exotic	NE
Lecythidaceae	<i>Barringtonia racemosa</i>	දිය මිදෙල්ල	Native	LC
Lecythidaceae	<i>Careya arborea</i>	කහට	Native	LC
Lentibulariaceae	<i>Utricularia bifida</i>	කහ ඉන්දින් තරු	Native	NT
Lentibulariaceae	<i>Utricularia caerulea</i>	නිල් මොණරැස්ස	Native	LC
Lentibulariaceae	<i>Utricularia graminifolia</i>		Native	NT
Lentibulariaceae	<i>Utricularia striatula</i>		Native	VU
Lentibulariaceae	<i>Utricularia uliginosa</i>		Native	VU
Linaceae	<i>Hugonia ferruginea</i>		Native	VU
Linderniaceae	<i>Artanema longifolium</i>	ගස් කොතල	Native	LC
Linderniaceae	<i>Torenia crustacea</i>		Native	LC
Linderniaceae	<i>Torenia cyanea</i>		Endemic	VU
Linderniaceae	<i>Torenia leucosiphon</i>	කොතල වැල්	Native	NT
Linderniaceae	<i>Vandellia diffusa</i>		Exotic	NE
Linderniaceae	<i>Vandellia pusilla</i>		Native	LC
Loganiaceae	<i>Strychnos minor</i>	කදුරු කැටිය වැල්	Native	LC
Loganiaceae	<i>Strychnos potatorum</i>	ඉඟිනි	Native	LC
Loganiaceae	<i>Strychnos wallichiana</i>	ඇට කිරිදි වැල්, වැල් බෙලි	Native	NT
Loranthaceae	<i>Dendrophthoe falcata</i>	දෙළුම් පිළිල	Native	LC
Loranthaceae	<i>Taxillus incanus</i>		Endemic	NT
Lythraceae	<i>Lagerstroemia speciosa</i>	මුරුත	Native	LC
Magnoliaceae	<i>Magnolia champaca</i>	සපු	Exotic	NE
Malpighiaceae	<i>Hiptage benghalensis</i>	පුවක් ගෙඩිය වැල්	Native	LC
Malvaceae	<i>Abelmoschus moschatus</i>	කපු කිනිස්ස, කස්තුර, ලතා කස්තුර	Exotic	NE
Malvaceae	<i>Hibiscus hispidissimus</i>		Native	LC
Malvaceae	<i>Hibiscus surattensis</i>	හීන් තාපිරිත්ත	Native	LC

Family	Scientific Name	Common Name	DS	TS
Malvaceae	<i>Hibiscus tilliaceous</i>	බෙලි පට්ට, වල් බෙලි	Native	LC
Malvaceae	<i>Sida acuta</i>	ගස් බැබිල	Native	LC
Malvaceae	<i>Sida cordata</i>	බැබිල, වැල් බැබිල	Native	LC
Malvaceae	<i>Sida rhombifolia</i> subsp. <i>alnifolia</i>	හීන් බැබිල	Native	LC
Malvaceae	<i>Sida rhombifolia</i> subsp. <i>rhombifolia</i>	කොටිකන් බැබිල	Native	LC
Malvaceae	<i>Urena lobata</i>	පට්ට ඇපල	Native	LC
Malvaceae	<i>Urena lobata</i> subsp. <i>sinuata</i>	හීන් ඇපල	Native	LC
Malvaceae	<i>Berrya cordifolia</i>	හල්මිල්ල	Native	LC
Malvaceae	<i>Bombax ceiba</i>	කටු ඉඹුල්	Native	LC
Malvaceae	<i>Ceiba pentandra</i>	කොට්ට පුලුන්	Exotic	NE
Malvaceae	<i>Durio ceylanicus</i>	කටුබොඩ	Endemic	LC
Malvaceae	<i>Durio zibethinus</i>	දුරියන්	Exotic	NE
Malvaceae	<i>Grewia carpinifolia</i>	වැල් කැලිය, වැල් මැදිය	Native	LC
Malvaceae	<i>Grewia helicterifolia</i>	බොර දම්ණිය	Native	LC
Malvaceae	<i>Grewia orientalis</i>	වැල් කැලිය	Native	LC
Malvaceae	<i>Grewia tiliifolia</i>	දම්ණිය	Native	LC
Malvaceae	<i>Helicteres isora</i>	ලීනිය	Native	LC
Malvaceae	<i>Microcos paniculata</i>	කොහු කිරිල්ල	Native	LC
Malvaceae	<i>Pterospermum suberifolium</i>	වෙලන්	Native	LC
Malvaceae	<i>Theobroma cacao</i>	කොකෝවා	Exotic	NE
Malvaceae	<i>Triumfetta pentandra</i>	ඇපල, කපු කිනිස්ස	Native	LC
Malvaceae	<i>Triumfetta pilosa</i>		Native	LC
Malvaceae	<i>Triumfetta rhomboidea</i>	ඇපල	Native	LC
Melastomataceae	<i>Heterotis rotundifolia</i>		Exotic	NE
Melastomataceae	<i>Melastoma malabathricum</i>	මහ බෝවිටියා	Native	LC
Melastomataceae	<i>Memecylon capitellatum</i>	දැදි කහ	Endemic	LC
Melastomataceae	<i>Memecylon rivulare</i>	පිනිබරු	Endemic	VU
Melastomataceae	<i>Memecylon umbellatum</i>	කොර කහ	Native	LC
Melastomataceae	<i>Miconia calvescens</i>	වෙල්වට් ගස්	Exotic	NE

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Melastomataceae	<i>Miconia crenata</i>	කටකළ බෝවිටියා	Exotic	NE
Melastomataceae	<i>Osbeckia octandra</i>	හීන් බෝවිටියා	Endemic	LC
Melastomataceae	<i>Sonerila silvatica</i>		Endemic	VU
Meliaceae	<i>Aglaia apiocarpa</i>	වල් රඹුටන්, දිය පුවඟු	Native	LC
Meliaceae	<i>Chukrasia tabularis</i>	හුලන් හික්, හිරි කින	Native	NT
Meliaceae	<i>Cipadessa baccifera</i>	හල් බැඹිය	Native	LC
Meliaceae	<i>Khaya senegalensis</i>		Exotic	NE
Meliaceae	<i>Melia azedarach</i>	ලුණුමිදෙල්ල	Exotic	DD
Meliaceae	<i>Swietenia macrophylla</i>	මැහෝගනී	Exotic	NE
Menispermaceae	<i>Anamirta cocculus</i>	තින්න වැල්	Native	LC
Menispermaceae	<i>Cissampelos pareira</i>	දියමින්න, යුස	Native	LC
Menispermaceae	<i>Coscinium fenestratum</i>	වෙනිවැල් ගැට	Native	LC
Menispermaceae	<i>Cyclea peltata</i>	කැහිපින්න	Native	LC
Menispermaceae	<i>Stephania japonica</i>	ලුණුකැටිය වැල්	Native	VU
Menispermaceae	<i>Tinospora cordifolia</i>	රස කිඳු	Native	LC
Monimiaceae	<i>Hortonia angustifolia</i>	නයිපන් වැවිය	Endemic	VU
Moraceae	<i>Allaeanthus zeylanicus</i>	අලඳු	Endemic	VU
Moraceae	<i>Artocarpus altilis</i>	රට දෙල්, දෙල්	Exotic	NE
Moraceae	<i>Artocarpus heterophyllus</i>	කොස්	Exotic	NE
Moraceae	<i>Artocarpus hirsutus</i>	බු දෙල්	Exotic	NE
Moraceae	<i>Artocarpus nobilis</i>	වල් දෙල්	Endemic	LC
Moraceae	<i>Ficus amplissima</i>	එළ නුග	Native	LC
Moraceae	<i>Ficus arnottiana</i>	කපුටු බෝ	Native	LC
Moraceae	<i>Ficus callosa</i>	වල් ගෝන, ගෝන්න	Native	LC
Moraceae	<i>Ficus diversiformis</i>		Endemic	LC
Moraceae	<i>Ficus drupacea</i> var. <i>pubescens</i>	බු නුග	Native	LC
Moraceae	<i>Ficus exasperata</i>	බු නෙදිය	Native	LC
Moraceae	<i>Ficus hispida</i>	කොට දිඹුල	Native	LC
Moraceae	<i>Ficus laevis</i>		Native	LC

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Moraceae	<i>Ficus mollis</i>	වල් අරළු	Native	LC
Moraceae	<i>Ficus racemosa</i>	අව්විකකා	Native	LC
Moraceae	<i>Ficus religiosa</i>	බෝ	Exotic	NE
Moraceae	<i>Ficus tinctoria</i>	වල් අහැටු	Native	LC
Moraceae	<i>Ficus tsjakela</i>	කීර්පෙල්ල	Native	LC
Moraceae	<i>Streblus asper</i>	ගැට නෙටුල්	Native	LC
Moraceae	<i>Streblus taxoides</i>	ගොන්ගොටු	Native	LC
Musaceae	<i>Musa x paradisiaca</i>	කෙහෙල්	Exotic	NE
Myristicaceae	<i>Horsfieldia iryaghedhi</i>	රුක්	Endemic	VU
Myristicaceae	<i>Myristica ceylanica</i>	මලබොඩ	Native	LC
Myristicaceae	<i>Myristica fragrans</i>	සාදිකකා	Exotic	NE
Myrtaceae	<i>Corymbia torelliana</i>		Exotic	NE
Myrtaceae	<i>Eucalyptus grandis</i>		Exotic	NE
Myrtaceae	<i>Eugenia mooniana</i>	උල්පත් ජම්බු	Native	LC
Myrtaceae	<i>Psidium guajava</i>	ජේර	Exotic	NE
Myrtaceae	<i>Psidium guineense</i>	අඹුල් ජේර	Exotic	NE
Myrtaceae	<i>Syzygium aromaticum</i>	කරාබු	Exotic	NE
Myrtaceae	<i>Syzygium caryophyllatum</i>	දං, හීන් දං	Native	LC
Myrtaceae	<i>Syzygium cumini</i>	මා දං, දං	Native	LC
Myrtaceae	<i>Syzygium jambos</i>	සීනි ජම්බු	Exotic	NE
Myrtaceae	<i>Syzygium neesianum</i>	පණු දං	Native	LC
Myrtaceae	<i>Syzygium nervosum</i>	බට දඹ	Native	LC
Myrtaceae	<i>Syzygium rubicundum</i>	කරව්, මහ කූරවිය, පිනිබරු, කූරවි දඹ	Native	EN
Myrtaceae	<i>Syzygium samarangense</i>	පිනි ජම්බු	Exotic	NE
Nymphaeaceae	<i>Nymphaea nouchali var. nouchali</i>	මානෙල්	Native	VU
Nymphaeaceae	<i>Nymphaea pubescens</i>	අන් ඹළ, ඹළ	Native	LC
Ochnaceae	<i>Campylospermum serratum</i>	බෝ කැර	Native	LC
Ochnaceae	<i>Ochna jabotapita</i>	මල් කැර	Native	NT

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Oleaceae	<i>Jasminum angustifolium</i>	වේ කැන්ද, වල් පිව්ව, වල් සමන්පිව්ව	Native	LC
Oleaceae	<i>Jasminum flexile</i>		Native	LC
Onagraceae	<i>Ludwigia decurrens</i>		Exotic	NE
Onagraceae	<i>Ludwigia hyssopifolia</i>		Exotic	NE
Onagraceae	<i>Ludwigia peruviana</i>	බෙරු දියනිල්ල	Exotic	NE
Opiliaceae	<i>Cansjera rheedii</i>	ඇටමුරු	Native	LC
Orchidaceae	<i>Acampe ochracea</i>	කුඩා නාඹ	Native	NT
Orchidaceae	<i>Anoectochilus regalis</i>	වන රාජ	Native	VU
Orchidaceae	<i>Arundina graminifolia</i>		Native	DD
Orchidaceae	<i>Cymbidium bicolor</i>	විසදුලි	Native	LC
Orchidaceae	<i>Dendrobium macrostachyum</i>	පොසොන් මල්	Native	LC
Orchidaceae	<i>Luisia zeylanica</i>		Native	LC
Orchidaceae	<i>Polystachya concreta</i>		Native	LC
Orchidaceae	<i>Thrixspermum pulchellum</i>		Endemic	LC
Orchidaceae	<i>Zeuxine regia</i>	ඉරු රාජ	Endemic	EN
Orchidaceae	<i>Zeuxine reginasilvae</i>		Endemic	EN
Oxalidaceae	<i>Biophytum intermedium</i>		Native	EN
Oxalidaceae	<i>Biophytum reinwardtii</i>	ගස් නිදිකුම්බා, හීන් නිදිකුම්බා, බිං නෙල්ලි	Native	LC
Oxalidaceae	<i>Oxalis barrelieri</i>		Exotic	NE
Pandanaceae	<i>Freycinetia pycnophylla</i>	වියකෙයියා, කොල්ල	Endemic	VU
Pandanaceae	<i>Freycinetia walkeri</i>	වියකෙයියා	Endemic	NT
Pandanaceae	<i>Pandanus amaryllifolius</i>	රම්පේ	Exotic	NE
Pandanaceae	<i>Pandanus ceylanicus</i>	ඹි කෙයියා	Endemic	VU
Pandanaceae	<i>Pandanus kaida</i>	වැටකෙයියා	Native	LC
Passifloraceae	<i>Adenia hondala</i>	හොඩල	Native	LC
Passifloraceae	<i>Passiflora edulis</i>	වැල් දොඩම්	Exotic	NE
Passifloraceae	<i>Passiflora foetida</i>	පඩ ගෙඩි	Exotic	NE
Passifloraceae	<i>Passiflora suberosa</i>	නින්න	Exotic	NE

Family	Scientific Name	Common Name	DS	TS
Pedaliaceae	<i>Sesamum radiatum</i>		Exotic	NE
Peraceae	<i>Chaetocarpus castanocarpus</i>	හැඩවක, හෙදොක	Native	LC
Phyllanthaceae	<i>Antidesma alexiteria</i>	හීන් ඇඹිල්ල	Native	LC
Phyllanthaceae	<i>Aporosa cardiosperma</i>	කැබැල්ල	Native	LC
Phyllanthaceae	<i>Aporosa lanceolata</i>	හීන් කැබැල්ල	Endemic	LC
Phyllanthaceae	<i>Baccaurea motleyana</i>	ගඩුගුඩා	Exotic	NE
Phyllanthaceae	<i>Breynia androgyna</i>	ජපන් බටු	Native	LC
Phyllanthaceae	<i>Breynia retusa</i>	වල් මුරංගා, වා	Native	LC
Phyllanthaceae	<i>Breynia vitis-idaea</i>	ගස් කැසිල	Native	LC
Phyllanthaceae	<i>Bridelia moonii</i>	පන් කැල	Endemic	LC
Phyllanthaceae	<i>Bridelia retusa</i>	කැට කැල	Native	LC
Phyllanthaceae	<i>Flueggea leucopyrus</i>	හීන් කටු පිළ, කටු පිළ	Native	LC
Phyllanthaceae	<i>Glochidion nemorale</i>		Endemic	LC
Phyllanthaceae	<i>Glochidion nemorale</i> var. <i>moonii</i>	බුහුණකිරිල්ල	Endemic	LC
Phyllanthaceae	<i>Glochidion stellatum</i>	මිළපැලිය, කිරිල්ල, තරු හුණකිරිල්ල	Endemic	LC
Phyllanthaceae	<i>Margaritaria cyanosperma</i>	කළු නියන්, සුදු ලියන්, කරවි, කුලු ලියන්	Endemic	VU
Phyllanthaceae	<i>Margaritaria indica</i>	කරවි, මහ කරවු	Native	LC
Phyllanthaceae	<i>Phyllanthus amarus</i>	පිටවක්කා	Native	NE
Phyllanthaceae	<i>Phyllanthus reticulatus</i>	වැල් කැසිල, ගස් දුම්මැල්ල, කැසිල	Native	LC
Phyllanthaceae	<i>Phyllanthus urinaria</i>	රන් පිටවක්කා	Native	LC
Phytolaccaceae	<i>Rivina humilis</i>	දිම්බිජු	Exotic	NE
Piperaceae	<i>Peperomia pellucida</i>	දිය නිප්පිලි	Exotic	NE
Piperaceae	<i>Piper fallax</i>	වල් ගම්මිරිස්	Native	LC
Piperaceae	<i>Piper nigrum</i>	ගම්මිරිස්	Exotic	NE
Plantaginaceae	<i>Adenosma camphorata</i>	කහ ගෝන කොළ	Endemic	EN
Plantaginaceae	<i>Limnophila repens</i>	අඹ විල, සඹ විල	Native	LC
Plantaginaceae	<i>Scoparia dulcis</i>	වල් කොත්තමල්ලි	Exotic	NE
Poaceae	<i>Arundo donax</i>	ඇපල බට	Exotic	NE

Family	Scientific Name	Common Name	DS	TS
Poaceae	<i>Axonopus compressus</i>	පොතු නණ	Exotic	NE
Poaceae	<i>Bambusa multiplex</i>	චීන උණ, කුරු උණ	Exotic	NE
Poaceae	<i>Bambusa vulgaris</i>	කහ උණ	Exotic	NE
Poaceae	<i>Buchloe dactyloides</i>			
Poaceae	<i>Cenchrus polystachios</i>		Exotic	NE
Poaceae	<i>Chrysopogon aciculatus</i>	තුන්තිරි, වන්ද	Native	LC
Poaceae	<i>Cymbopogon nardus</i>	පැහිරි මාන	Native	LC
Poaceae	<i>Ochlandra stridula</i>	බට	Endemic	LC
Poaceae	<i>Urochloa maxima</i>	ගිණි නණ	Exotic	NE
Polygalaceae	<i>Xanthophyllum zeylanicum</i>	පලල	Endemic	LC
Primulaceae	<i>Ardisia missionis</i>	ලුණුපත්	Native	LC
Primulaceae	<i>Ardisia moonii</i>		Native	NE
Primulaceae	<i>Embelia ribes</i> var. <i>ribes</i>	වැල් ඇඹිලිය, වලඟසාල්, රසායන	Native	LC
Primulaceae	<i>Embelia tsjeriam-cottam</i>		Native	NT
Primulaceae	<i>Maesa indica</i>	මානමිබි	Native	LC
Proteaceae	<i>Grevillea robusta</i>	සබුක්කු	Exotic	NE
Rhamnaceae	<i>Gouania microcarpa</i>		Native	NT
Rhamnaceae	<i>Ventilago gamblei</i>		Native	LC
Rhamnaceae	<i>Ventilago madraspatana</i>	යකඩ වැල්	Native	LC
Rhamnaceae	<i>Ziziphus oenopolia</i>	හීන් එරමිණියා	Native	LC
Rhamnaceae	<i>Ziziphus rugosa</i>	මහ එරමිණියා	Native	NT
Rhizophoraceae	<i>Carallia brachiata</i>	දවට	Native	LC
Rosaceae	<i>Prunus walkeri</i>	ගොළු මොර	Endemic	LC
Rubiaceae	<i>Canthium coromandelicum</i>	කර	Native	LC
Rubiaceae	<i>Canthium rheedei</i>	රිදී කර	Native	NT
Rubiaceae	<i>Cinchona officinalis</i>	සිංකෝනා	Exotic	NE
Rubiaceae	<i>Coffea arabica</i>	කෝපි	Exotic	NE
Rubiaceae	<i>Exallage auricularia</i> subsp. <i>auricularia</i>	ගැට කොළ	Native	LC
Rubiaceae	<i>Gaertnera vaginans</i>	පේර නඹල	Endemic	LC

Family	Scientific Name	Common Name	DS	TS
Rubiaceae	<i>Gynochthodes umbellata</i>	කිරි වැල්	Native	LC
Rubiaceae	<i>Hedyotis fruticosa</i>	වැරණිය	Native	LC
Rubiaceae	<i>Hedyotis neesiana</i>	උල් වැරණිය, පිට සුදු පළා	Native	VU
Rubiaceae	<i>Hedyotis nodulosa</i>		Endemic	VU
Rubiaceae	<i>Ixora coccinea</i>	රත්මල්, රතඹලා	Native	LC
Rubiaceae	<i>Ixora jucunda</i>	ගොඩ රත්මල්	Endemic	NT
Rubiaceae	<i>Lasianthus thwaitesii</i> var. <i>nitidus</i>		Endemic	CR
Rubiaceae	<i>Mitracarpus hirtus</i>		Exotic	NE
Rubiaceae	<i>Mussaenda frondosa</i>	මුස්සන්ද	Native	LC
Rubiaceae	<i>Neurocalyx calycinus</i>		Native	VU
Rubiaceae	<i>Ophiorrhiza mungos</i>	දත් කැටිය	Native	LC
Rubiaceae	<i>Pavetta blanda</i>	පාවච්චා	Native	LC
Rubiaceae	<i>Psychotria nigra</i>	කළු වල් ගොනිකා	Native	LC
Rubiaceae	<i>Psychotria sarmentosa</i>	වල් ගොනිකා	Native	NT
Rubiaceae	<i>Psydrax dicoccos</i> var. <i>dicoccos</i>	පණු කරව්	Native	LC
Rubiaceae	<i>Richardia brasiliensis</i>		Exotic	NE
Rubiaceae	<i>Saprosma foetens</i>	ගදැනිය	Endemic	LC
Rubiaceae	<i>Scyphostachys coffeoides</i>	වල් කෝපි	Endemic	EN
Rubiaceae	<i>Spermacoce articularis</i>		Native	LC
Rubiaceae	<i>Spermacoce exilis</i>		Exotic	NE
Rubiaceae	<i>Spermacoce latifolia</i>		Exotic	NE
Rubiaceae	<i>Spermacoce ocymifolia</i>		Exotic	NE
Rubiaceae	<i>Spermacoce remota</i>		Exotic	NE
Rubiaceae	<i>Tarenna asiatica</i>	තරණ	Native	LC
Rubiaceae	<i>Uncaria elliptica</i>		Native	LC
Rubiaceae	<i>Wendlandia bicuspidata</i>	රාවණ් ඉදල, වන ඉදල	Native	LC
Rutaceae	<i>Acronychia pedunculata</i>	අන්කෝන්ද	Native	LC
Rutaceae	<i>Atalantia ceylanica</i>	යකිතාරං	Native	LC
Rutaceae	<i>Citrus x aurantiifolia</i>	දෙනි, හීන් දෙනි, උඩු දෙනි	Exotic	NE

Family	Scientific Name	Common Name	DS	TS
Rutaceae	<i>Citrus x reticulata</i>	හීන් තාරං	Exotic	NE
Rutaceae	<i>Clausena anisata</i>		Native	LC
Rutaceae	<i>Clausena indica</i>	මී ගොං කරපිංවා	Native	LC
Rutaceae	<i>Glycosmis angustifolia</i>	බොල් පතා	Native	NT
Rutaceae	<i>Glycosmis mauritiana</i>		Native	LC
Rutaceae	<i>Glycosmis pentaphylla</i>	දොඩම් පතා	Native	LC
Rutaceae	<i>Limonia acidissima</i>	දිවුල්, ජුල්	Native	LC
Rutaceae	<i>Luvunga angustifolia</i>		Endemic	VU
Rutaceae	<i>Melicope lunu-ankenda</i>	ලුණු අත්කෙත්ද	Native	LC
Rutaceae	<i>Murraya paniculata</i>	ඇට්ටේරියා	Native	LC
Rutaceae	<i>Paramignya monophylla</i> var. <i>monophylla</i>	වෙල්ලංගිරිය, යකා බැඳි වැල්	Native	LC
Rutaceae	<i>Toddalia asiatica</i>	කුඩුමිරිස්ස	Native	LC
Salicaceae	<i>Flacourtia indica</i>	උගුරුස්ස	Native	LC
Sapindaceae	<i>Allophylus cobbe</i>	කොබ්බෑ	Native	LC
Sapindaceae	<i>Allophylus zeylanicus</i>	වල් කොබ්බෑ	Endemic	LC
Sapindaceae	<i>Cardiospermum microcarpum</i>	පෙනෙල වැල්	Native	NT
Sapindaceae	<i>Dimocarpus longan</i>	මොර, රස මොර, පැණි මොර	Native	LC
Sapindaceae	<i>Filicium decipiens</i>	පිහිඹිය	Native	LC
Sapindaceae	<i>Nephelium lappaceum</i>	රඹුටන්	Exotic	NE
Sapindaceae	<i>Pometia pinnata</i>	බුටු මොර, නා ඉඹුල්, ගල් මොර	Native	LC
Sapindaceae	<i>Schleichera oleosa</i>	කෝන්, අලොන් ගස්	Native	LC
Sapotaceae	<i>Chrysophyllum cainito</i>	කොස් ඇට ලාවුළු	Exotic	NE
Sapotaceae	<i>Donella lanceolata</i>	ලාවුළු, රට ලාවුළු	Native	NT
Sapotaceae	<i>Madhuca longifolia</i> var. <i>longifolia</i>	මී	Native	LC
Sapotaceae	<i>Madhuca nerifolia</i>	ගං මී, ගුල පුෂ්ප	Native	VU
Sapotaceae	<i>Palaquium hinmolpedda</i>	හීන් මෝල්පැද්ද, මිරිය, කිරි මිරිය	Endemic	VU
Simaroubaceae	<i>Brucea javanica</i>	නින්න කොහොඹ	Native	LC
Smilacaceae	<i>Smilax perfoliata</i>	මහ කබරස	Native	LC
Smilacaceae	<i>Smilax zeylanica</i>	හීන් කබරස	Native	NT

Family	Scientific Name	Common Name	DS	TS
Solanaceae	<i>Physalis angulata</i>		Exotic	NE
Solanaceae	<i>Solanum americanum</i>	කළු කන්වේරිය, කෙම්මේරිය	Exotic	NE
Solanaceae	<i>Solanum seaforthianum</i>		Exotic	NE
Solanaceae	<i>Solanum torvum</i>	නිබ්බටු	Exotic	NE
Solanaceae	<i>Solanum violaceum</i>	නිබ්බටු, නිත්ත බටු	Native	LC
Staphyleaceae	<i>Turpinia malabarica</i>	ඇට හිරිල්ල, කන්කුඹල, ගෙරිය, කුකුළුමාන්	Native	LC
Symplocaceae	<i>Symplocos acuminata</i>	බෝඹු	Native	LC
Theaceae	<i>Camellia sinensis</i>	තේ	Exotic	NE
Thymelaeaceae	<i>Gyrinops walla</i>	වල්ල පට්ට	Native	VU
Thymelaeaceae	<i>Wikstroemia indica</i>		Exotic	NE
Urticaceae	<i>Elatostema lineolatum</i>		Native	VU
Urticaceae	<i>Pilea microphylla</i>	පරිප්පු ගස්	Exotic	NE
Urticaceae	<i>Procris crenata</i>		Native	LC
Verbenaceae	<i>Lantana camara</i>	ගඳපාන	Exotic	NE
Verbenaceae	<i>Stachytarpheta cayennensis</i>		Exotic	NE
Verbenaceae	<i>Stachytarpheta jamaicensis</i>	බලනකුට	Exotic	NE
Vitaceae	<i>Causonis trifolia</i>	වල් රත් දිය ලබු	Native	LC
Vitaceae	<i>Cissus quadrangularis</i>	හීරැස්ස	Native	LC
Vitaceae	<i>Cissus vitiginea</i>	වල් නිවිනි	Native	LC
Vitaceae	<i>Cyphostemma trilobata</i>		Native	LC
Vitaceae	<i>Tetrastigma nilagiricum</i>		Native	LC
Vitaceae	<i>Leea indica</i>	බුරැල්ල	Native	LC
Zingiberaceae	<i>Alpinia purpurata</i>		Exotic	NE
Zingiberaceae	<i>Boesenbergia rotunda</i>	අඹ කහ	Exotic	NE
Zingiberaceae	<i>Curcuma zedoaria</i>	හරන් කහ	Exotic	NE
Zingiberaceae	<i>Hedychium coronarium</i>	එළ මල්	Exotic	NE
Zingiberaceae	<i>Meistera fulviceps</i>	නිය	Native	VU

Annex 2b. The list of animal species recorded during the assessment.

Abbreviations used: **TS** - Threat Status; **DS** - Distribution Status; **CR** - Critically Endangered; **CR(PE)** - Critically Endangered possible Extinct; **DD** - Data Deficient; **EN** – Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** – Vulnerable, * indicate status updated according to the latest global assessment. Recorded only in 2016 assessment, New Records from 2021/2022 assessment.

	Family	Scientific Name	Common Name	DS	TS
Dragonflies					
1	Calopterygidae	<i>Neurobasis chinensis</i>	Oriental green-wing	Resident	VU
2	Calopterygidae	<i>Vestails nigrescens</i>	Black-tipped flashwing	Resident	LC*
3	Chlorocyphidae	<i>Libellago greeni</i>	Green's Gem	Endemic	LC*
4	Euphaeidae	<i>Euphaea splendens</i>	Shining Gossamerwing	Endemic	LC*
5	Coenagrionidae	<i>Agriocnemis pygmaea</i>	Wandering Wisp	Resident	LC
6	Coenagrionidae	<i>Ceriagrion cerinorubellum</i>	Painted Waxtail	Resident	VU
7	Coenagrionidae	<i>Ceriagrion coromandelianum</i>	Yellow Waxtail	Resident	LC
8	Coenagrionidae	<i>Pseudagrion rubriceps</i>	Orange-faced Sprite	Resident	LC*
9	Coenagrionidae	<i>Archibasis lieftincki</i>	Lieftinck's Sprite	Endemic	EN*
10	Platycnemididae	<i>Copera marginipes</i>	Yellow Featherleg	Resident	LC
11	Platycnemididae	<i>Elattonaura oculata</i>	Two-spotted threadtail	Endemic	VU*
12	Platycnemididae	<i>Elattonaura caesia</i>	Jungle Threadtail	Endemic	NT*
13	Platycnemididae	<i>Elattonaura centralis</i>	Dark-glittering Threadtail	Endemic	LC*
14	Platycnemididae	<i>Elattonaura tenax</i>	Red-striped Threadtail	Endemic	VU*
15	Platycnemididae	<i>Onychargia atrocyana</i>	Marsh Dancer	Resident	VU
16	Platycnemididae	<i>Prodasineura sita</i>	Stripe-headed Threadtail	Endemic	LC*
17	Platystictidae	<i>Ceylonosticta anamia</i>	Ana Mia's Shadowdamsel	Endemic	VU*
18	Platystictidae	<i>Ceylonosticta brincki</i>	Brinck's Shadowdamsel	Endemic	LC*
19	Platystictidae	<i>Ceylonosticta lankanensis</i>	Drooping Shadowdamsel	Endemic	LC*
20	Platystictidae	<i>Ceylonosticta nietneri</i>	Nietner's Shadowdamsel	Endemic	VU*
21	Platystictidae	<i>Ceylonosticta bine</i>	Bine's Shadowdamsel	Endemic	VU*
22	Platystictidae	<i>Ceylonosticta walli</i>	Wall's shadowdamsel	Endemic	EN*

	Family	Scientific Name	Common Name	DS	TS
23	Platystictidae	<i>Ceylonosticta cf. montana</i>	Black-shouldered Cornuted Shadowdamsel	Endemic	EN*
24	Platystictidae	<i>Platysticta apicalis</i>	Dark Forestdamsel	Endemic	NT*
25	Platystictidae	<i>Platysticta serendibica</i>	Serendib Forestdamsel	Endemic	NT*
26	Gomphidae	<i>Burmagomphus pyramidalis</i>	Sinuate Clubtail	Resident	VU*
27	Gomphidae	<i>Cyclogomphus gynostylus</i>	Transvestite Clubtail	Endemic	VU*
28	Gomphidae	<i>Megalogomphus ceylonicus</i>	Sri Lanka Sabretail	Endemic	VU*
29	Gomphidae	<i>Paragomphus campestris</i>	Lowland Hooktail	Endemic	LC*
30	Gomphidae	<i>Paragomphus henryi</i>	Brook Hooktail	Endemic	NT*
31	Gomphidae	<i>Heliogomphus walli</i>	Wall's Grapple-tail	Endemic	NT*
32	Gomphidae	<i>Microgomphus wijaya</i>	Wijaya's Scissortail	Endemic	VU*
33	Gomphidae	<i>Gomphidia pearsoni</i>	Rivulet Tiger	Endemic	VU*
34	Aeshnidae	<i>Anax immaculifrons</i>	Fiery Emperor	Resident	VU
35	Aeshnidae	<i>Gynacantha dravida</i>	Indian Duskhawker	Resident	NT
36	Macromiidae	<i>Macromia flinti</i>	Flint's Emerald	Endemic	CR*
37	Macromiidae	<i>Macromia zeylanica</i>	Sri Lanka Cruiser	Endemic	VU*
38	Synthemistidae	<i>Macromidia donaldi</i>	Forest Shadow-emerald	Resident	EN*
39	Libellulidae	<i>Tetrathemis yerburii</i>	Yerbury's Elf	Endemic	VU*
40	Libellulidae	<i>Lathrecista asiatica</i>	Pruinosed Bloodtail	Resident	LC
41	Libellulidae	<i>Orthetrum chrysis</i>	Spine-tufted Skimmer	Resident	VU
42	Libellulidae	<i>Orthetrum glaucum</i>	Asian Skimmer	Resident	NT
43	Libellulidae	<i>Orthetrum luzonicum</i>	Marsh Skimmer	Resident	NT
44	Libellulidae	<i>Orthetrum pruinosum</i>	Pink Skimmer	Resident	NT
45	Libellulidae	<i>Orthetrum sabina</i>	Green Skimmer	Resident	LC
46	Libellulidae	<i>Acisoma panorpoides</i>	Asian Pintail	Resident	LC
47	Libellulidae	<i>Brachythemis contaminata</i>	Asian Groundling	Resident	LC
48	Libellulidae	<i>Bradinopyga geminata</i>	Indian Rockdweller	Resident	LC
49	Libellulidae	<i>Diplacodes trivialis</i>	Blue Percher	Resident	LC
50	Libellulidae	<i>Neurothemis intermedia</i>	Paddyfield Parasol	Resident	NT

Family		Scientific Name	Common Name	DS	TS
51	Libellulidae	<i>Neurothemis tullia</i>	Pied Parasol	Resident	LC
52	Libellulidae	<i>Trithemis aurora</i>	Crimson Dropwing	Resident	LC
53	Libellulidae	<i>Trithemis festiva</i>	Indigo Dropwing	Resident	VU
54	Libellulidae	<i>Onychothemis testacea</i>	Aggressive Riverhawk	Resident	EN
55	Libellulidae	<i>Rhyothemis variegata</i>	Variiegated Flutterer	Resident	LC
56	Libellulidae	<i>Hydrobasileus croceus</i>	Amber-winged Glider	Resident	NT
57	Libellulidae	<i>Pantala flavescens</i>	Wandering Glider	Resident	LC
58	Libellulidae	<i>Tramea limbata</i>	Sociable Glider	Resident	LC
59	Libellulidae	<i>Zygonyx iris</i>	Sri Lanka Cascader	Resident	NT*
Butterflies					
1	Papilionidae	<i>Troides darsius</i>	Sri Lankan Birdwing	Endemic	LC
2	Papilionidae	<i>Pachliopta hector</i>	Crimson Rose	Resident	LC
3	Papilionidae	<i>Pachliopta aristolochiae</i>	Common Rose	Resident	LC
4	Papilionidae	<i>Pachliopta jophon</i>	Sri Lanka Rose	Endemic	EN
5	Papilionidae	<i>Papilio crino</i>	Banded Peacock	Resident	VU
6	Papilionidae	<i>Papilio demoleus</i>	Lime Butterfly	Resident	LC
7	Papilionidae	<i>Papilio helenus</i>	Red Helen	Resident	VU
8	Papilionidae	<i>Papilio polytes</i>	Common Mormon	Resident	LC
9	Papilionidae	<i>Papilio polymnestor</i>	Blue Mormon	Resident	LC
10	Papilionidae	<i>Papilio clytia</i>	Mime	Resident	LC
11	Papilionidae	<i>Graphium tereon</i>	Narrow-banded Bluebottle	Resident	LC
12	Papilionidae	<i>Graphium agamemnon</i>	Tailed Jay	Resident	LC
13	Pieridae	<i>Leptosia nina</i>	Psyche	Resident	LC
14	Pieridae	<i>Delias eucharis</i>	Jezebel	Resident	LC
15	Pieridae	<i>Appias albina</i>	Common albatross	Resident	LC
16	Pieridae	<i>Appias galene</i>	Sri Lankan Lesser Albatross	Endemic	LC
17	Pieridae	<i>Pareronia ceylanica</i>	Dark Wanderer	Resident	LC
18	Pieridae	<i>Catopsilia pomona</i>	Lemon Emigrant	Resident	LC
19	Pieridae	<i>Catopsilia pyranthe</i>	Mottled Emigrant	Resident	LC

	Family	Scientific Name	Common Name	DS	TS
20	Pieridae	<i>Catopsilia scylla</i>	Orange Migrant	Introduced	LC
21	Pieridae	<i>Eurema hecabe</i>	Common Grass Yellow	Resident	LC
22	Pieridae	<i>Eurema blanda</i>	Three-Spot Grass Yellow	Resident	LC
23	Pieridae	<i>Eurema ormistoni</i>	Sri Lankan One-Spot Grass Yellow	Endemic	VU
24	Nymphalidae	<i>Tirumala limniace</i>	Blue Tiger	Resident	LC
25	Nymphalidae	<i>Parantica aglea</i>	Glassy Tiger	Resident	LC
26	Nymphalidae	<i>Parantica taprobana</i>	Sri Lanka Tiger	Endemic	EN
27	Nymphalidae	<i>Danaus genutia</i>	Common Tiger	Resident	LC
28	Nymphalidae	<i>Euploea core</i>	Common Crow	Resident	LC
29	Nymphalidae	<i>Ariadne ariadne</i>	Angled Castor	Resident	LC
30	Nymphalidae	<i>Cupha erymanthis</i>	Rustic	Resident	LC
31	Nymphalidae	<i>Phalanta phalantha</i>	Common Leopard	Resident	LC
32	Nymphalidae	<i>Cirrochroa thais</i>	Tamil Yeoman	Resident	LC
33	Nymphalidae	<i>Cethosia nietneri</i>	Tamil Lace Wing	Resident	LC
34	Nymphalidae	<i>Acraea terpsicore</i>	Tawny Coster	Resident	LC
35	Nymphalidae	<i>Hypolimnas bolina</i>	Great Eggfly	Resident	LC
36	Nymphalidae	<i>Hypolimnas misippus</i>	Danaid Eggfly	Resident	LC
37	Nymphalidae	<i>Junonia atlites</i>	Grey Pansy	Resident	LC
38	Nymphalidae	<i>Junonia iphita</i>	Chocolate Soldier	Resident	LC
39	Nymphalidae	<i>Junonia almana</i>	Peacock Pansy	Resident	LC
40	Nymphalidae	<i>Pantoporia hordonia</i>	Common Lascar	Resident	NT
41	Nymphalidae	<i>Neptis hylas</i>	Common Sailor	Resident	LC
42	Nymphalidae	<i>Neptis jumbah</i>	Chestnut Streaked Sailor	Resident	LC
43	Nymphalidae	<i>Moduza procris</i>	Commander	Resident	LC
44	Nymphalidae	<i>Parthenos sylvia</i>	Clipper	Resident	LC
45	Nymphalidae	<i>Hypolimnas bolina</i>	Great Eggfly	Resident	LC
46	Nymphalidae	<i>Hypolimnas misippus</i>	Danaid Eggfly	Resident	LC
47	Nymphalidae	<i>Charaxes psaphon</i>	Tawny Rajah	Resident	NT
48	Nymphalidae	<i>Charaxes bharata</i>	Indian Nawab	Resident	LC

	Family	Scientific Name	Common Name	DS	TS
49	Nymphalidae	<i>Euthalia lubentina</i>	Gaudy Baron	Resident	VU
50	Nymphalidae	<i>Euthalia aconthea</i>	Baron	Resident	LC
51	Nymphalidae	<i>Discophora lepida</i>	Southern Duffer	Resident	VU
52	Nymphalidae	<i>Melanitis leda</i>	Common Evening Brown	Resident	LC
53	Nymphalidae	<i>Melanitis phedima</i>	Dark Evening Brown	Resident	NT
54	Nymphalidae	<i>Orsotriaena medus</i>	Medus Brown	Resident	LC
55	Nymphalidae	<i>Mycalesis mineus</i>	Dark-Brand Bushbrown	Resident	LC
56	Nymphalidae	<i>Mycalesis perseus</i>	Common Bushbrown	Resident	LC
57	Nymphalidae	<i>Mycalesis patnia</i>	Sri Lanka Gladeye Bushbrown	Endemic	LC
58	Nymphalidae	<i>Ypthima ceylonica</i>	White Four-ring	Resident	LC
59	Nymphalidae	<i>Elymnias hypermnestra</i>	Common Palmfly	Resident	LC
60	Lycaenidae	<i>Spalgis epeus</i>	Apefly	Resident	LC
61	Lycaenidae	<i>Surendra quercetorum</i>	Common Acacia Blue	Resident	LC
62	Lycaenidae	<i>Loxura atymnus</i>	Yamfly	Resident	LC
63	Lycaenidae	<i>Nacaduba beroe</i>	Opaque Six Lineblue	Resident	EN
64	Lycaenidae	<i>Nacaduba hermus</i>	Pale Four Lineblue	Resident	NT
65	Lycaenidae	<i>Prosotas nora</i>	Common Lineblue	Resident	LC
66	Lycaenidae	<i>Everes lacturnus</i>	Indian Cupid	Resident	LC
67	Lycaenidae	<i>Jamides bochus</i>	Dark Cerulean	Resident	LC
68	Lycaenidae	<i>Jamides coruscans</i>	Sri Lankan Cerulean	Endemic	VU
69	Lycaenidae	<i>Jamides alecto</i>	Metallic Cerulean	Resident	LC
70	Lycaenidae	<i>Jamides celeno</i>	Common Cerulean	Resident	LC
71	Lycaenidae	<i>Jamides lacteata</i>	Sri Lanka Milky Cerulean	Endemic	VU
72	Lycaenidae	<i>Lampides boeticus</i>	Pea Blue	Resident	LC
73	Lycaenidae	<i>Catochrysops panormus</i>	Silver Forget-me-not	Resident	CR
74	Lycaenidae	<i>Castalius rosimon</i>	Common Pierrot	Resident	LC
75	Lycaenidae	<i>Discolampa ethion</i>	Banded Blue Pierrot	Resident	LC
76	Lycaenidae	<i>Caleta decidia</i>	Angled Pierrot	Resident	LC
77	Lycaenidae	<i>Talicauda nyseus</i>	Red Pierrot	Resident	LC

	Family	Scientific Name	Common Name	DS	TS
78	Lycaenidae	<i>Zizeeria karsandra</i>	Dark Grass Blue	Resident	LC
79	Lycaenidae	<i>Zizina otis</i>	Lesser Grass Blue	Resident	LC
80	Lycaenidae	<i>Zizula hylax</i>	Tiny Grass Blue	Resident	LC
81	Lycaenidae	<i>Acytolepis puspa</i>	Common Hedge Blue	Resident	LC
82	Lycaenidae	<i>Neopithecops zalmora</i>	Quaker	Resident	LC
83	Lycaenidae	<i>Megisba malaya</i>	Malayan	Resident	LC
84	Lycaenidae	<i>Chilades pandava</i>	Plains Cupid	Resident	LC
85	Lycaenidae	<i>Chilades lajus</i>	Lime Blue	Resident	LC
86	Lycaenidae	<i>Amblypodia anita</i>	Purple leaf Blue	Resident	NT
87	Lycaenidae	<i>Tajuria cippus</i>	Peacock Royal	Resident	LC
88	Riodinidae	<i>Abisara echerius</i>	Plum Judy	Resident	LC
89	Hesperiidae	<i>Hasora chromus</i>	Common Banded Awl	Resident	LC
90	Hesperiidae	<i>Coladenia tissa</i>	Sri Lankan Pied Flat	Endemic	NT
91	Hesperiidae	<i>Tagiades japetus</i>	Common Snow Flat	Resident	LC
92	Hesperiidae	<i>Tagiades litigiosa</i>	Water Snow Flat	Resident	VU
93	Hesperiidae	<i>Caprona ransonnettii</i>	Golden Angle	Resident	LC
94	Hesperiidae	<i>Telicota colon</i>	Pale Palmdart	Resident	NT
95	Hesperiidae	<i>Spialia galba</i>	Grizzled Skipper	Resident	LC
96	Hesperiidae	<i>Baracus vittatus</i>	Sri Lankan Hedge Hopper	Endemic	VU
97	Hesperiidae	<i>Ampittia dioscorides</i>	Bush Hopper	Resident	LC
98	Hesperiidae	<i>Halpe ceylonica</i>	Sri Lankan Ace	Endemic	EN
99	Hesperiidae	<i>Iambrix salsala</i>	Chestnut Bob	Resident	LC
100	Hesperiidae	<i>Matapa aria</i>	Common Red Eye	Resident	VU
101	Hesperiidae	<i>Notocrypta paralysos</i>	Common Banded Demon	Resident	VU
102	Hesperiidae	<i>Notocrypta curvifascia</i>	Restricted Demon	Resident	VU
103	Hesperiidae	<i>Erionota torus</i>	Rounded Palm Red Eye	Introduced	NE
104	Hesperiidae	<i>Taractrocera maevius</i>	Common Grass Dart	Resident	LC
105	Hesperiidae	<i>Telicota colon</i>	Pale Palmdart	Resident	NT
106	Hesperiidae	<i>Oriens goloides</i>	Common Dartlet	Resident	NT

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107	Hesperiidae	<i>Potanthus satra</i>	Sri Lankan Dart/Tropic dart	Endemic	LC
108	Hesperiidae	<i>Parnara bada</i>	Smallest Swift	Resident	NT
109	Hesperiidae	<i>Pelopidas agna</i>	Little Branded Swift	Resident	NT
110	Hesperiidae	<i>Pelopidas conjuncta</i>	Conjoined Swift	Resident	VU
111	Hesperiidae	<i>Baoris penicillata</i>	Sri Lankan Paint Brush Swift	Endemic	CR
112	Hesperiidae	<i>Borbo cinnara</i>	Wallace's Swift	Resident	LC
Spiders					
1	Araneidae	<i>Gasteracantha geminata</i>	Common Kite Spider	Resident	LC
2	Araneidae	<i>Argiope</i> sp.			
3	Araneidae	<i>Argiope taprobanica</i>		Endemic	DD
4	Araneidae	<i>Bijoaraneus mitificus</i>		Resident	LC
5	Araneidae	<i>Cyclosa</i> sp.			
6	Araneidae	<i>Cyclosa bifida</i>	Long-bellied Cyclosa Spider	Resident	LC
7	Araneidae	<i>Eriovixia</i> sp.		Resident	LC
8	Araneidae	<i>Gea spinipes</i>		Resident	CR
9	Araneidae	<i>Herennia multipuncta</i>		Resident	LC
10	Araneidae	<i>Neoscona</i> sp.			
11	Araneidae	<i>Thelacantha brevispina</i>		Resident	EN
12	Barychelidae	<i>Sason</i> sp.			
13	Clubionidae	<i>Matidia</i> sp.			
14	Corinnidae	<i>Corinnomma</i> sp.			
15	Hersiliidae	<i>Hersilia</i> sp.			
16	Lycosidae	<i>Hippasa</i> sp.			
17	Pholcidae	<i>Belisana gowindahela</i>		Endemic	NE
18	Pholcidae	<i>Belisana ratnapura</i>		Endemic	NE
19	Pholcidae	<i>Leptopholcus kandy</i>		Resident	NE
20	Pholcidae	<i>Pholcus ceylonicus</i>		Endemic	NE
21	Pholcidae	<i>Tissahamia ethagala</i>		Endemic	NE
22	Pisauridae	<i>Perenethis</i> sp.			

	Family	Scientific Name	Common Name	DS	TS
23	Psechridae	<i>Fecenia</i> sp.			
24	Psechridae	<i>Psechrus</i> sp.			
25	Salticidae	<i>Asemonea tenuipes</i>		Resident	CR
26	Salticidae	<i>Brettus adonis</i>		Endemic	DD
27	Salticidae	<i>Brettus</i> sp.			
28	Salticidae	<i>Carrhotus</i> sp.			
29	Salticidae	<i>Indopadilla</i> sp.			
30	Salticidae	<i>Myrmaplata plataleoides</i>	Weaver ant mimicking spider	Resident	LC
31	Salticidae	<i>Myrmarachne spissa</i>		Endemic	DD
32	Salticidae	<i>Myrmarachne</i> sp.			
33	Salticidae	<i>Onomastus</i> sp.			
34	Salticidae	<i>Phintella vittata</i>	Banded Phintella	Resident	LC
35	Salticidae	<i>Phintelloidess</i> sp.			
36	Salticidae	<i>Portia</i> sp.			
37	Salticidae	<i>Siler semiglaucus</i>	Red & Blue Tiny Jumper	Resident	LC
38	Salticidae	<i>Telamonia</i> sp.			
39	Salticidae	<i>Plexippus paykulli</i>	Large Housefly catcher	Resident	NT
40	Salticidae	<i>Plexippus petersi</i>	Common Housefly catcher	Resident	LC
41	Scytodidae	<i>Dictis striatipes</i>			
42	Sparassidae	<i>Heteropoda</i> sp.			
43	Sparassidae	<i>Thelcticopius</i> sp.			
44	Tetragnathidae	<i>Atelidea spinosa</i>		Endemic	EN
45	Tetragnathidae	<i>Leucauge fastigata</i>	Pear-shaped Leucauge	Resident	LC
46	Tetragnathidae	<i>Tetragnatha</i> sp.			
47	Tetragnathidae	<i>Tylorida ventralis</i>		Resident	DD
48	Tetragnathidae	<i>Orsinome</i> sp.			
49	Theraphosidae	<i>Chilobrachys nitelinus</i>		Endemic	EN
50	Theraphosidae	<i>Plesiophrictus</i> sp.			
51	Theridiidae	<i>Argyroides</i> sp.			

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52	Theridiidae	<i>Meotipa</i> sp.			
53	Thomisidae	<i>Oxytate subvirens</i>	Sri Lanka Elongated Green Crab Spider	Endemic	NT
54	Thomisidae	<i>Strigoplus</i> sp.			
55	Thomisidae	<i>Lycopus</i> sp.			
56	Uloboridae	<i>Uloborus</i> sp.			
57	Uloboridae	<i>Zosis geniculata</i>	Grey House Spider	Resident	LC
58	Uloboridae	<i>Miagrammopes</i> sp.			
Land Snails					
1	Euconulidae	<i>Eurychlamys</i> sp.			
2	Ariophantidae	<i>Cryptozona bistrialis</i>	Common Translucent Snail	Resident	LC
3	Ariophantidae	<i>Cryptozona chenui</i>		Endemic	VU
4	Ariophantidae	<i>Euplecta</i> sp.			
5	Ariophantidae	<i>Ratnadvipia irradians</i>		Endemic	VU
6	Ariophantidae	<i>Ratnadvipia karui</i>		Endemic	CR
7	Ariophantidae	<i>Mariaella dussumieri</i>	Common Shelled Slug	Introduced	NE
8	Ariophantidae	<i>Satiella membranacea</i>	Sri Lanka Lucid Satiella Snail	Endemic	CR
9	Achatinidae	<i>Lissachatina fulica</i>	Giant African Snail	Introduced	NE
10	Acavidae	<i>Acavus phoenix</i>	Arabian Lustful Snail	Endemic	NT
11	Acavidae	<i>Acavus superbus</i>	Superb Lustful Snail	Endemic	VU
12	Acavidae	<i>Oligospira polei</i>	Sri Lanka White Lip Blunted Snail	Endemic	EN
13	Camaenidae	<i>Beddomea albizonatus</i>		Endemic	VU
14	Veronicellidae	<i>Laevicaulis alte</i>	Leatherleaf Slug	Resident	LC
15	Cyclophoroidea	<i>Cyclophorus menkeanus</i>		Endemic	VU
16	Cyclophoroidea	<i>Aulopoma grande</i>	Grande's Operculate Snail	Endemic	VU
17	Cyclophoroidea	<i>Theobaldius</i> sp.			
18	Pupinidae	<i>Tortulosa</i> sp.			
Freshwater Fish					
1	Cyprinidae	<i>Dawkinsia filamentosa</i>	Sri Lanka Filamented Barb	Resident	LC
2	Cyprinidae	<i>Garra ceylonensis</i>	Sri Lanka Stone Sucker	Endemic	NT

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3	Cyprinidae	<i>Pethia nigrofasciata</i>	Sri Lanka Black Ruby Barb	Endemic	VU
4	Cyprinidae	<i>Puntius bimaculatus</i>	Redside Barb	Resident	LC
5	Cyprinidae	<i>Puntius dorsalis</i>	Long-Snouted Barb	Resident	LC
6	Cyprinidae	<i>Pethia reval</i>	Redfin Two-banded carplet	Endemic	EN
7	Cyprinidae	<i>Puntius kelumi</i>	Sri Lanka Redeye Barb	Endemic	EN
8	Cyprinidae	<i>Puntius titteya</i>	Sri Lanka Cherry Barb	Endemic	VU
9	Cyprinidae	<i>Puntius vittatus</i>	Silver Barb	Resident	LC
10	Cyprinidae	<i>Systemus asoka</i>	Asoka Barb	Endemic	CR
11	Cyprinidae	<i>Systemus pleurotaenia</i>	Sri Lanka Black-Lined Barb	Endemic	VU
12	Cyprinidae	<i>Systemus sarana</i>	Olive Barb	Resident	NE
13	Cyprinidae	<i>Tor khudree</i>	Masheer	Resident	NT
14	Cyprinidae	<i>Oreochromis sp.</i>	Tilapia	Introduced	NE
15	Danionidae	<i>Devario malabaricus</i>	Giant Danio	Resident	LC
16	Danionidae	<i>Rasbora dandia</i>	Broad line Striped Rasbora	Resident	LC
17	Danionidae	<i>Rasbora microcephalus</i>	Carverii rasbora	Resident	LC
18	Nemacheilidae	<i>Paracanthocobitis urophthalma</i>	Sri Lanka Tiger Loach	Endemic	EN
19	Nemacheilidae	<i>Schistura notostigma</i>	Sri Lanka Banded Mountain Loach	Endemic	NT
20	Cobitidae	<i>Lepidocephalichthys thermalis</i>	Common Spiny Loach	Resident	LC
21	Bagridae	<i>Mystus ankutta</i>	Sri Lanka Dwarf Catfish	Endemic	EN
22	Bagridae	<i>Mystus nanus</i>	Striped dwarf catfish	Endemic	LC
23	Bagridae	<i>Mystus zeylanicus</i>	Sri Lanka mystus	Endemic	LC
24	Siluridae	<i>Ompok argestes</i>	Wet zone Butter Catfish	Endemic	VU
25	Gobiidae	<i>Awaous melanocephalus</i>	Scribbled Goby	Resident	LC
26	Mastacembelidae	<i>Mastacembelus armatus</i>	Marbled Spiny Eel	Resident	LC
27	Channidae	<i>Channa cf. ara</i>	Wetzone Giant snakehead	Endemic	NE
28	Channidae	<i>Channa kelaartii</i>	Brown Snakehead	Resident	NT
29	Channidae	<i>Channa orientalis</i>	Smooth-Breasted Snakehead	Endemic	VU
30	Channidae	<i>Channa striata</i>	Murrel	Resident	LC
31	Clariidae	<i>Clarias brachysoma</i>	Walking catfish	Endemic	NT

	Family	Scientific Name	Common Name	DS	TS
32	Aplocheilidae	<i>Aplocheilus dayi</i>	Sri Lanka Day's Killifish	Endemic	EN
33	Belonidae	<i>Xenentodon cancila</i>	Freshwater Gar Fish	Resident	VU
34	Belontiidae	<i>Belontia signata</i>	Sri Lanka Combtail	Endemic	VU
Amphibians					
1	Bufonidae	<i>Adenomus kelaartii</i>	Kelaart's dwarf toad	Endemic	VU*
2	Bufonidae	<i>Duttaphrynus melanostictus</i>	Common toad	Resident	LC
3	Microhylidae	<i>Uperodon taprobanicus</i>	Sri Lankan bullfrog	Resident	LC
4	Microhylidae	<i>Uperodon obscura</i>	Obscure ramanella	Endemic	NT*
5	Ranidae	<i>Hydrophylax gracilis</i>	Sri Lanka wood frog	Endemic	LC*
6	Ranidae	<i>Indosylvirana serendipi</i>	Sri Lanka Golden-backed Frog	Endemic	VU*
7	Ranidae	<i>Indosylvirana temporalis</i>	Bronzed frog	Endemic	NT*
8	Dicroglossidae	<i>Euphlyctis cyanophlyctis</i>	Indian skipper frog	Resident	LC
9	Dicroglossidae	<i>Minervarya agricola</i>	Common paddy field frog	Resident	LC
10	Dicroglossidae	<i>Minervarya kirtisinghei</i>	Kirtisinghe's frog	Endemic	NT*
11	Dicroglossidae	<i>Hoplobatrachus crassus</i>	Jurdon's bullfrog	Resident	LC
12	Dicroglossidae	<i>Nannophrys ceylonensis</i>	Sri Lanka rock frog	Endemic	VU*
13	Nictibatrachidae	<i>Lankanectes corrugatus</i>	Corrugated water frog	Endemic	NT*
14	Rhacophoridae	<i>Pseudophilautus cavirostris</i>	Hollow snouted shrub frog	Endemic	VU*
15	Rhacophoridae	<i>Pseudophilautus fergusonianus</i>	Ferguson's shrub frog	Endemic	LC*
16	Rhacophoridae	<i>Pseudophilautus folicola</i>	Leaf dwelling shrub frog	Endemic	VU*
17	Rhacophoridae	<i>Pseudophilautus pleurotaenia</i>	Side-striped shrub frog	Endemic	VU*
18	Rhacophoridae	<i>Pseudophilautus limbus</i>	Haycock shrub frog	Endemic	EN*
19	Rhacophoridae	<i>Pseudophilautus popularis</i>	Common shrub frog	Endemic	VU*
20	Rhacophoridae	<i>Pseudophilautus reticulatus</i>	Reticulated thigh shrub frog	Endemic	VU*
21	Rhacophoridae	<i>Pseudophilautus rus</i>	Kandian shrub frog	Endemic	NT*
22	Rhacophoridae	<i>Pseudophilautus sarasinorum</i>	Muller's shrub frog	Endemic	EN*
23	Rhacophoridae	<i>Pseudophilautus schneideri</i>	Schneider's shrub frog	Endemic	VU*
24	Rhacophoridae	<i>Pseudophilautus sordidus</i>	Grubby shrub frog	Endemic	NT*
25	Rhacophoridae	<i>Pseudophilautus stictomerus</i>	Orange canthal shrub frog	Endemic	VU*

	Family	Scientific Name	Common Name	DS	TS
26	Rhacophoridae	<i>Polypedates cruciger</i>	Common hourglass tree frog	Endemic	LC*
27	Rhacophoridae	<i>Polypedates maculatus</i>	Spotted tree frog	Resident	LC
28	Rhacophoridae	<i>Taruga longinasus</i>	Long-snouted tree frog	Endemic	EN*
Reptiles					
1	Agamidae	<i>Calotes calotes</i>	Green forest Lizard	Resident	LC
2	Agamidae	<i>Calotes liolepis</i>	Whistling Lizard	Endemic	LC*
3	Agamidae	<i>Calotes versicolor</i>	Garden Lizard	Resident	LC
4	Agamidae	<i>Lyriocephalus scutatus</i>	Hump-nosed Lizard	Endemic	VU*
5	Agamidae	<i>Otocryptis wiegmanni</i>	Sri Lankan Kangaroo Lizard	Endemic	LC*
6	Gekkonidae	<i>Cyrtodactylus fraenatus</i>	Bridled Bent-toed Gecko	Endemic	CR
7	Gekkonidae	<i>Hemidactylus depressus</i>	Kandian Gecko	Endemic	LC*
8	Gekkonidae	<i>Hemidactylus frenatus</i>	Asian House Gecko	Resident	LC
9	Gekkonidae	<i>Cnemaspis molligodai</i>	Molligoda's Daygecko	Endemic	EN*
10	Gekkonidae	<i>Cnemaspis silvula</i>	Forest Daygecko	Endemic	LC*
11	Scincidae	<i>Lankascincus dorsicatenatus</i>	Catenated lanka skink	Endemic	LC*
12	Scincidae	<i>Lankascincus fallax</i>	Common Supple Skink	Endemic	LC*
13	Scincidae	<i>Lankascincus cf. gansi</i>	Gans's Lanka Skink	Endemic	LC*
14	Scincidae	<i>Nessia burtonii</i>	Three-toed Snake Skink	Endemic	NT*
15	Scincidae	<i>Eutropis carinata</i>	Common Skink	Resident	LC
16	Scincidae	<i>Eutropis greeri</i>	Greer's Skink	Endemic	DD*
17	Scincidae	<i>Eutropis madaraszi</i>	Spotted Skink	Endemic	LC*
18	Varanidae	<i>Varanus bengalensis</i>	Land Monitor	Resident	LC
19	Varanidae	<i>Varanus salvator</i>	Water Monitor	Resident	LC
20	Colubridae	<i>Ahaetulla nasuta</i>	Green Vine Snake	Endemic	LC
21	Colubridae	<i>Boiga ceylonensis</i>	Sri Lanka cat Snake	Resident	LC
22	Colubridae	<i>Chrysopelea ornata</i>	Ornate Flying Snake	Resident	VU
23	Colubridae	<i>Dendrelaphis caudolineolatus</i>	Striped-tailed Bronze-back	Resident	VU*
24	Colubridae	<i>Oligodon sublineatus</i>	Streaked Kukri Snake	Endemic	VU*
25	Colubridae	<i>Ptyas mucosa</i>	Sri Lankan Rat Snake	Resident	LC

	Family	Scientific Name	Common Name	DS	TS
26	Natricidae	<i>Fowlea asperrimus</i>	Sri Lankan Keelback	Endemic	LC*
27	Cylindrophidae	<i>Cylindrophis maculatus</i>	Sri Lankan Pipe Snake	Endemic	VU*
28	Elapidae	<i>Naja naja</i>	Indian Cobra	Resident	LC*
29	Elapidae	<i>Bungarus ceylonicus</i>	Sri Lankan Krait	Endemic	NT*
30	Pythonidae	<i>Python molurus</i>	Rock Python	Resident	LC
31	Typhlopidae	<i>Typhlopid sp. 1</i>			
32	Typhlopidae	<i>Typhlopid sp. 2</i>			
33	Viperidae	<i>Daboia russelii</i>	Indian Russell's Viper	Resident	LC*
34	Viperidae	<i>Hypnale hypnale</i>	Merrem's Hump-nosed Pit Viper	Resident	LC*
35	Viperidae	<i>Hypnale zara</i>	Wall's Hump-nosed Pit Viper	Endemic	NT*
36	Viperidae	<i>Trimeresurus trigonocephalus</i>	Sri Lanka Green Pit Viper	Endemic	LC*
37	Trionychidae	<i>Lissemys ceylonensis</i>	Sri Lanka Flapshell Turtle	Endemic	VU*
Birds					
1	Phasianidae	<i>Pavo cristatus</i>	Indian Peafowl	Resident	LC
2	Phasianidae	<i>Gallus lafayetii</i>	Sri Lanka Junglefowl	Endemic	LC
3	Rallidae	<i>Amaurornis phoenicurus</i>	White-breasted Waterhen	Resident	LC
4	Turnicidae	<i>Turnix suscitator</i>	Barred Buttonquail	Resident	LC
5	Ciconiidae	<i>Anastomus oscitans</i>	Asian Openbill	Resident	LC
6	Ardeidae	<i>Bubulcus ibis</i>	Cattle Egret	Resident	LC
7	Phalacrocoracidae	<i>Phalacrocorax niger</i>	Little Cormorant	Resident	LC
8	Phalacrocoracidae	<i>Phalacrocorax fuscicollis</i>	Indian Cormorant	Resident	LC
9	Accipitridae	<i>Ictinaetus malayensis</i>	Black Eagle	Resident	NT
10	Accipitridae	<i>Haliastur indus</i>	Brahminy Kite	Resident	LC
11	Accipitridae	<i>Spizaetus cirrhatus</i>	Changeable Hawk-eagle	Resident	LC
12	Accipitridae	<i>Spilornis cheela</i>	Crested Serpent-eagle	Resident	LC
13	Accipitridae	<i>Pernis ptilorhyncus</i>	Oriental Honey-buzzard	Resident	NT
14	Accipitridae	<i>Accipiter badius</i>	Shikra	Resident	LC
15	Accipitridae	<i>Haliaeetus leucogaster</i>	White-bellied Sea-eagle	Resident	LC
16	Accipitridae	<i>Hieraetus kienerii</i>	Rufous-bellied Eagle	Resident	NT

	Family	Scientific Name	Common Name	DS	TS
17	Charadriidae	<i>Vanellus indicus</i>	Red-wattled Lapwing	Resident	LC
18	Columbidae	<i>Chalcophaps indica</i>	Emerald Dove	Resident	LC
19	Columbidae	<i>Ducula aenea</i>	Green Imperial-Pigeon	Resident	LC
20	Columbidae	<i>Treron pompadora</i>	Sri Lanka Green-Pigeon	Endemic	LC
21	Columbidae	<i>Stigmatopelia chinensis</i>	Spotted Dove	Resident	LC
22	Columbidae	<i>Columba livia</i>	Rock Pigeon	Introduced	NE
23	Psittacidae	<i>Psittacula eupatria</i>	Alexandrine Parakeet	Resident	LC
24	Psittacidae	<i>Psittacula cyanocephala</i>	Plum-headed Parakeet	Resident	NT
25	Psittacidae	<i>Psittacula calthropae</i>	Sri Lanka Emerald-collared Parakeet	Endemic	NT
26	Psittacidae	<i>Psittacula krameri</i>	Rose-ringed Parakeet	Resident	LC
27	Psittacidae	<i>Loriculus beryllinus</i>	Sri Lanka Hanging Parrot	Endemic	LC
28	Cuculidae	<i>Eudynamys scolopaceus</i>	Asian Koel	Resident	LC
29	Cuculidae	<i>Centropus sinensis</i>	Greater Coucal	Resident	LC
30	Cuculidae	<i>Cuculus varius</i>	Common Hawk-cuckoo	Resident	EN
31	Cuculidae	<i>Cacomantis sonneratii</i>	Banded Bay Cuckoo	Resident	NT
32	Strigidae	<i>Ketupa zeylonensis</i>	Brown Fish-owl	Resident	LC
33	Strigidae	<i>Strix leptogrammica</i>	Brown Wood-owl	Resident	NT
34	Podargidae	<i>Batrachostomus moniliger</i>	Frogmouth	Resident	LC
35	Apodidae	<i>Cypsiurus balasiensis</i>	Asian Palm-swift	Resident	LC
36	Apodidae	<i>Collocalia unicolor</i>	Indian Swiftlet	Resident	LC
37	Apodidae	<i>Apus affinis</i>	Little Swift	Resident	LC
38	Hemiprocnidae	<i>Hemiprocne coronata</i>	Crested Treeswift	Resident	LC
39	Alcedinidae	<i>Ceyx erithaca</i>	Black-backed Kingfisher	Resident	NT
40	Alcedinidae	<i>Alcedo atthis</i>	Common Kingfisher	Resident	LC
41	Alcedinidae	<i>Halcyon smyrnensis</i>	White-throated Kingfisher	Resident	LC
42	Alcedinidae	<i>Pelargopsis capensis</i>	Stork-billed Kingfisher	Resident	LC
43	Meropidae	<i>Merops leschenaulti</i>	Chestnut-headed Bee-eater	Resident	LC
44	Meropidae	<i>Merops philippinus</i>	Blue-tailed Bee-eater	Migrant	LC*
45	Bucerotidae	<i>Ocyeros gingalensis</i>	Sri Lanka Grey Hornbill	Endemic	LC

	Family	Scientific Name	Common Name	DS	TS
46	Ramphastidae	<i>Megalaima zeylanica</i>	Brown-headed Barbet	Resident	LC
47	Ramphastidae	<i>Megalaima rubricapillus</i>	Sri Lanka Barbet	Endemic	LC
48	Ramphastidae	<i>Megalaima flavifrons</i>	Sri Lanka Yellow-fronted Barbet	Endemic	LC
49	Picidae	<i>Dinopium psarodes</i>	Lesser Sri Lanka Flameback	Endemic	LC
50	Picidae	<i>Dendrocopos nanus</i>	Brown-capped Woodpecker	Resident	LC
51	Picidae	<i>Chrysocolaptes stricklandi</i>	Greater Sri Lanka Flameback	Endemic	LC
52	Picidae	<i>Picus chlorolophus</i>	Lesser Yellownape	Resident	NT
53	Artamidae	<i>Artamus fuscus</i>	Ashy Woodswallow	Resident	LC
54	Aegithinidae	<i>Aegithina tiphia</i>	Common Iora	Resident	LC
55	Campephagidae	<i>Pericrocotus flammeus</i>	Scarlet Minivet	Resident	LC
56	Campephagidae	<i>Pericrocotus cinnamomeus</i>	Small Minivet	Resident	LC
57	Campephagidae	<i>Hemipus picatus</i>	Bar-winged Flycatcher-shrike	Resident	LC
58	Campephagidae	<i>Coracina macei</i>	Large Cuckooshrike	Resident	LC
59	Campephagidae	<i>Coracina melanoptera</i>	Black-headed Cuckoo-shrike	Resident	LC
60	Campephagidae	<i>Tephrodornis pondicerianus</i>	Sri Lanka Wood-shrike	Endemic	LC
61	Laniidae	<i>Lanius cristatus</i>	Brown Shrike	Migrant	LC*
62	Oriolidae	<i>Oriolus xanthornus</i>	Black-hooded Oriole	Resident	LC
63	Dicruridae	<i>Dicrurus caerulescens</i>	White-bellied Drongo	Resident	LC
64	Rhipiduridae	<i>Rhipidura aureola</i>	White-browed Fantail	Resident	LC
65	Monarchiidae	<i>Terpsiphone paradisi</i>	Asian Paradise Flycatcher	Resident	LC
66	Monarchiidae	<i>Hypothymis azurea</i>	Black-naped Monarch	Resident	LC
67	Corvidae	<i>Corvus splendens</i>	House Crow	Resident	LC
68	Corvidae	<i>Corvus leuclantii</i>	Jungle Crow	Resident	LC
69	Hirundinidae	<i>Hirundo hyperythra</i>	Sri Lanka swallow	Endemic	LC
70	Hirundinidae	<i>Hirundo rustica</i>	Barn Swallow	Migrant	LC*
71	Cisticolidae	<i>Prinia socialis</i>	Ashy Prinia	Resident	LC
72	Cisticolidae	<i>Prinia hodgsonii</i>	Gray-breasted Prinia	Resident	LC
73	Cisticolidae	<i>Prinia inornata</i>	Plain Prinia	Resident	LC
74	Pycnonotidae	<i>Hypsipetes leucocephalus</i>	Asian Black Bulbul	Resident	LC

	Family	Scientific Name	Common Name	DS	TS
75	Pycnonotidae	<i>Pycnonotus melanicterus</i>	Black-crested Bulbul	Endemic	LC
76	Pycnonotidae	<i>Pycnonotus cafer</i>	Red-vented Bulbul	Resident	LC
77	Pycnonotidae	<i>Pycnonotus luteolus</i>	White-browed Bulbul	Resident	LC
78	Pycnonotidae	<i>Iole indica</i>	Yellow-browed Bulbul	Resident	LC
79	Sylviidae	<i>Orthotomus sutorius</i>	Common Tailorbird	Resident	LC
80	Sylviidae	<i>Phylloscopus magnirostris</i>	Large-billed Leaf-warbler	Migrant	LC*
81	Sylviidae	<i>Phylloscopus trochiloides</i>	Greenish Warbler	Migrant	LC*
82	Timaliidae	<i>Rhopocichla atriceps</i>	Dark-fronted Babbler	Resident	LC
83	Timaliidae	<i>Pellorneum fuscopapillus</i>	Sri Lanka Brown-capped Babbler	Endemic	LC
84	Timaliidae	<i>Dumetia hyperythra</i>	Tawny-bellied Babbler	Resident	LC
85	Timaliidae	<i>Turdoides affinis</i>	Yellow-billed Babbler	Resident	LC
86	Timaliidae	<i>Pomatorhinus melanurus</i>	Sri Lanka Scimitar Babbler	Endemic	LC
87	Timaliidae	<i>Turdoides rufescens</i>	Sri Lanka Orange-billed Babbler	Endemic	VU
88	Zosteropidae	<i>Zosterops palpebrosus</i>	Oriental White Eye	Resident	LC
89	Zosteropidae	<i>Zosterops ceylonensis</i>	Sri Lanka White-eye	Endemic	NT
90	Sittidae	<i>Sitta frontalis</i>	Velvet Fronted Nuthatch	Resident	LC
91	Sturnidae	<i>Acridotheres tristis</i>	Common Myna	Resident	LC
92	Sturnidae	<i>Gracula ptilogenys</i>	Sri Lanka Myna	Endemic	VU
93	Sturnidae	<i>Gracula religiosa</i>	Hill Myna	Resident	LC
94	Turdidae	<i>Zoothera spiloptera</i>	Sri Lanka Spot-winged Thrush	Endemic	VU
95	Muscicapidae	<i>Saxicoloides fulicatus</i>	Indian Robin	Resident	LC
96	Muscicapidae	<i>Copsychus saularis</i>	Oriental Magpie Robin	Resident	LC
97	Muscicapidae	<i>Cyornis tickelliae</i>	Tickell's Blue Flycatcher	Resident	LC
98	Muscicapidae	<i>Copsychus malabaricus</i>	White Rumped Shama	Resident	LC
99	Muscicapidae	<i>Eumyias sordidus</i>	Sri Lanka Dull-blue Flycatcher	Endemic	VU
100	Muscicapidae	<i>Muscicapa dauurica</i>	Asian Brown Flycatcher	Migrant	LC*
101	Muscicapidae	<i>Muscicapa muttui</i>	Brown-breasted Flycatcher	Migrant	LC*
102	Chloropseidae	<i>Chloropsis aurifrons</i>	Golden Fronted Leafbird	Resident	LC
103	Chloropseidae	<i>Chloropsis jerdoni</i>	Jerdon's Leafbird	Resident	LC

Family		Scientific Name	Common Name	DS	TS
104	Dicaeidae	<i>Dicaeum erythrorhynchos</i>	Pale-billed Flowerpecker	Resident	LC
105	Dicaeidae	<i>Dicaeum vincens</i>	Sri Lanka White-throated Flowerpecker	Endemic	VU
106	Nectariniidae	<i>Nectarinia zeylonica</i>	Purple-rumped Sunbird	Resident	LC
107	Nectariniidae	<i>Nectarinia lotenia</i>	Long-billed Sunbird	Resident	LC
108	Nectariniidae	<i>Nectarinia asiatica</i>	Purple Sunbird	Resident	LC
109	Passeridae	<i>Passer domesticus</i>	House Sparrow	Resident	LC
110	Estrildidae	<i>Lonchura punctulata</i>	Scaly-breasted Munia	Resident	LC
111	Estrildidae	<i>Lonchura striata</i>	White-rumped Munia	Resident	LC
112	Motacillidae	<i>Motacilla cinerea</i>	Grey Wagtail	Migrant	LC*
113	Motacillidae	<i>Anthus richardi</i>	Richard's Pipit	Migrant	LC*
114	Motacillidae	<i>Anthus rufulus</i>	Paddyfield Pipit	Resident	LC
Mammals					
1	Suidae	<i>Sus scrofa</i>	Wild boar	Resident	LC
2	Hystricidae	<i>Hystrix indica</i>	Porcupine	Resident	LC
3	Muridae	<i>Rattus rattus</i> (Linnaeus, 1758)	Common House Rat	Resident	LC
4	Sciuridae	<i>Funambulus palmarum</i>	Palm squirrel	Resident	LC
5	Sciuridae	<i>Ratufa macroura</i>	Giant squirrel	Resident	LC
6	Mustelidae	<i>Lutra lutra</i>	Otter	Resident	VU
7	Leporidae	<i>Lepus nigricollis</i>	Black-naped hare	Resident	LC
8	Cercopithecidae	<i>Macaca sinica</i>	Sri Lanka toque monkey	Endemic	LC
9	Cercopithecidae	<i>Semnopithecus vetulus</i>	Sri Lanka Purple-faced langur	Endemic	EN
10	Manidae	<i>Manis crassicaudata</i>	Pangolin	Resident	NT
11	Cervidae	<i>Muntiacus muntjak</i>	Barking deer	Resident	NT
12	Tragulidae	<i>Moschiola meminna</i>	Sri Lanka mouse-deer	Resident	LC
13	Viverridae	<i>Paradoxurus hermaphoditus</i>	Palm cat	Resident	LC
14	Felidae	<i>Prionailurus viverrinus</i>	Fishing cat	Resident	EN
15	Canidae	<i>Canis aureus</i>	Jackal	Resident	LC
16	Rhinolophidae	<i>Rhinolophus rouxii</i>	Rufous horse-shoe bat	Resident	LC

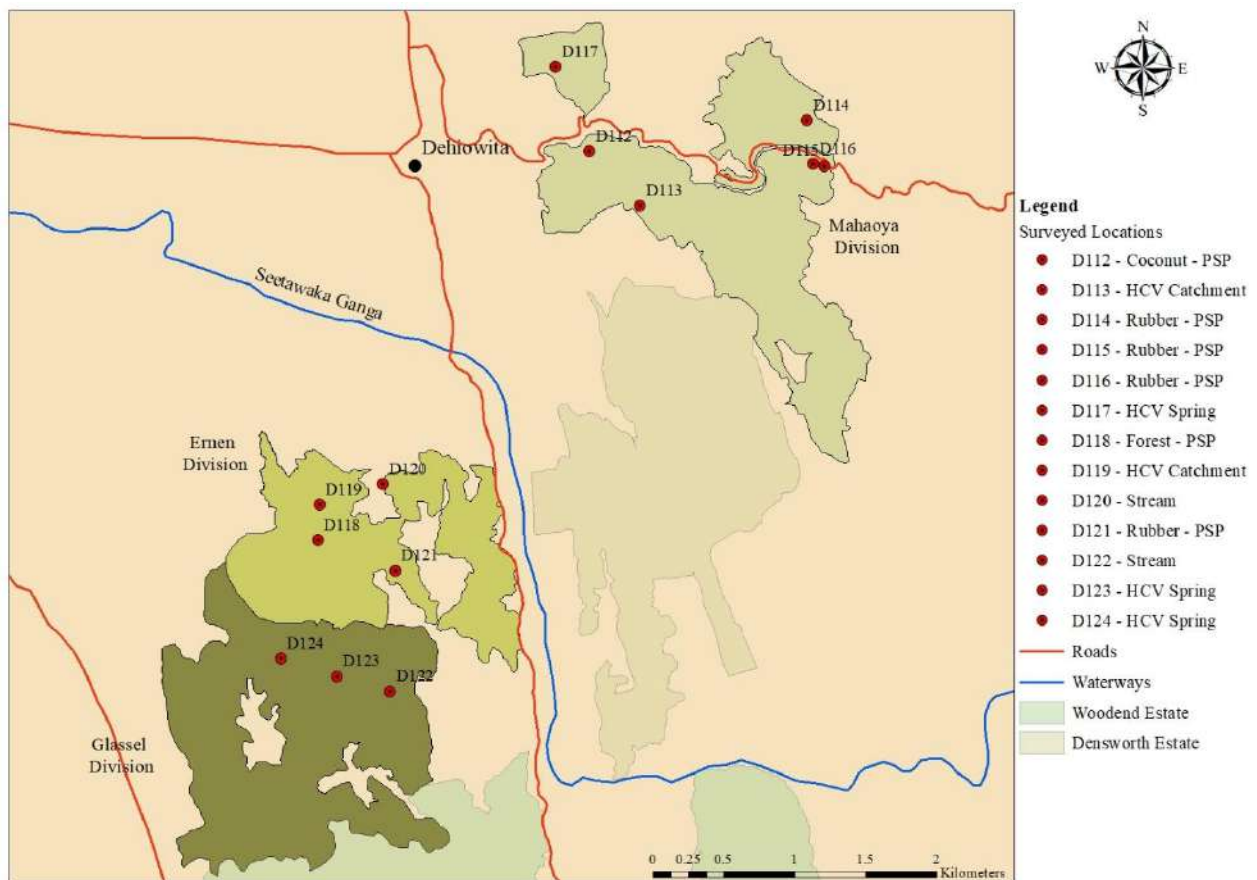
	Family	Scientific Name	Common Name	DS	TS
17	Megadermatidae	<i>Megaderma spasma</i>	Lesser False Vampire bat	Resident	VU
18	Pteropodidae	<i>Pteropus giganteus</i>	Flying fox	Resident	LC
19	Pteropodidae	<i>Rousettus leschenaulti</i>	Fulvous fruit bat	Resident	LC
20	Soricidae	<i>Suncus montanus</i>	Sri Lanka Highland shrew	Endemic	EN
21	Viverridae	<i>Viverricula indica</i>	Ring-tailed civet	Resident	LC
22	Lorisidae	<i>Loris tardigradus</i>	Sri Lanka red slender loris	Endemic	VU
23	Lorisidae	<i>Loris lyderkkerianus</i>	Sri Lanka grey slender loris	Resident	NT

Mahaoya Estate

1. Introduction

Mahaoya Estate is managed under the Mahaoya Group of Lalan Rubbers Pvt. Ltd. It is located in the Kegalle District and has a total extent of 706.58 ha. There are three divisions in the estate which are located in two clusters. The primary crop grown is rubber and some extents of coconut is also present. The extent of conservation areas in the estate is 142.61 ha. There is a conservation forest in the Ernen Division and several HCVs important for the provision of freshwater are also present in the estate.

Mahaoya estate is located in the wet climatic zone of the country. Ecologically the area is near the conjunction of three floristic zones, i.e., Northern Wet Lowland Floristic Zone, Sinharaja and Ratnapura Floristic Zone and Foothills of Adam's Peak and Ambagamuwa Floristic Zone. The estate is located in the Kelani River basin and Seethawaka Ganga, a tributary of Kelani River, flows east to the western portion of the estate.



Map of Mahaoya Estate and the distribution of sampling sites (Table XX).

2. Methodological approach

2.1 Study locations: Altogether, 13 sampling sites were surveyed, 6 in Mahaoya Division, 4 in Ernen Division and 3 in Glasel Division. These includes one Conservation Forest site, a forest cave, PSPs in Rubber, and a several springs and streams. A summary of locations sampled are given in Table 1 and the distribution of the sampling plots within the Mahaoya estate is shown in Figure 1.

Table 1. The number of sites sampled within the Mahaoya Estate

Division	Site	Site type	Site code	Latitude	Longitude	Ele. (m)
Mahaoya	Coconut between 1998/1997	Coconut - PSP	D112	6.96470	80.27645	40
	Rubber 1997 HCV	Catchment	D113	6.96125	80.27967	83
	Rubber 2011	Rubber - PSP	D114	6.96666	80.29028	152
	Rubber 2005	Rubber - PSP	D115	6.96378	80.29135	102
	Rubber 1989 - Uprooted	Rubber - PSP	D116	6.96390	80.29067	108
	HCV Spring 2013	Spring	D117	6.97005	80.27433	73
Ernen	Conservation Forest	Forest - PSP	D118	6.94008	80.25925	106
	Rubber 2014 HCV	Catchment	D119	6.94232	80.25935	92
	Rubber 2014/1990/1998	Stream	D120	6.94362	80.26339	85
	Rubber 1987 - Uprooted	Rubber - PSP	D121	6.93815	80.26418	109
Glasel	Rubber 2001/2006/2008	Stream	D122	6.93050	80.26384	57
	Rubber 1983 HCV Spring	Spring	D123	6.93145	80.26046	96
	Rubber 1990 HCV spring	Spring	D124	6.93256	80.25692	140

2.2 Study Period: This study was undertaken in January 2022 covering the dry season of the area and the bird migratory season.

2.3 Study techniques: Please refer Chapter 1

3. Key Findings of the Biodiversity Assessment

Based on the results of the assessments conducted in the Mahaoya estate 194 species of plants and 143 species of animals were recorded. This included 34 species of endemic fauna, 29 species of endemic flora, 19 species of threatened fauna and 19 species of threatened flora. A summary of the species recorded under different taxonomic groups are presented in table 2. The detailed list of plants and animals observed during this study including their distribution and threat status is given in Annex 2a and 2b.

Table 2. Summary of the total fauna and flora recorded during the assessment.

Abbreviations used: CR - Critically Endangered; EN - Endangered; VU – Vulnerable, NT - Near Threatened, DD – Data Deficient.

Taxa	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Dragonflies	16	7	-	-	-	4	1	-
Butterflies	33	1	-	1	1	-	-	-
Freshwater Fish	19	10	-	-	3	4	3	-
Amphibians	6	6	-	-	-	4	2	-
Reptiles	7	2	-	-	-	-	-	-
Birds	54	7	6*	-	-	-	3	-
Mammals	8	1	-	-	1	1	2	-
Sub-Total (Fauna)	143	34	6*	1	5	13	11	0
Plants	194	29	49	2	3	14	15	2
Total (Species)	337	63	49	3	8	27	26	2

4. Important Findings of the Assessment

4.1. Critical Species

1. Sri Lanka Red-eye Barb (*Puntius kelumi*)

This is an endemic and Endangered fish species found in the low country wet zone of Sri Lanka. It is a bottom feeder and thus usually seen close to the stream substrate. Red-eye Barb prefers medium to large streams with a substrate of sand and pebbles. It is found in the stream running along 2001/2006/2008 Rubber fields in the Glasel Division (Site D112).



Sri Lanka Red-eye Barb. Image: TR

2. *Diospyros koenigii*

Diospyros koenigii is an endemic tree species, growing up to 15m in height and around 50cm in diameter. Often mistaken for the similar and more familiar species *Diospyros ebenum* (Kaluwara), this is a Critically Endangered species with only very few confirmed records. It was observed in the Rubber 1997 HCV catchment in Mahaoya Division (Site D113).



Diospyros koenigii. Mahaoya Division. Image: HJ

4.2. Critical Habitats

1. Rubber 1997 HCV Catchment

This HCV catchment area consist of a small forest patch and a stream running through it. It is an important site where rare and threatened species such as the Critically Endangered tree *Diospyros koenigii*, and Vulnerable amphibians such as Sri Lanka Rock Frog, Leaf-rolling Shrub Frog and Orange canthal Shrub Frog are found.



Rubber 1997 HCV Catchment

5. Conclusions and Recommendations

Results of the present assessment indicates that the total species richness and the number of endemic and threatened species recorded remains equal or higher in most instances compared to previous survey done in 2016. It should be noted that some of the species recorded during the previous assessments have not been recorded during the present survey and number of new species including endemic and threatened species have been newly recorded during the present assessment. Therefore, based on this data it can be safely concluded that the species richness as well as number of critical species (endemic and threatened species) have not undergone a decline between the two assessments.

Based on the findings of this assessment and the field observations the following set of recommendations can be made.

1. The field with the Coconut PSP in Mahaoya Division is being used as a nursery site and thus does not represent a typical coconut field. It is recommended to establish a more suitable PSP or change the nursery site to a new location.

2. The HCV Catchment in 1990 Rubber field in Glasel Division is a forest patch with a considerable extent and likely to support some rare and threatened species. It can be recommended to be managed as a conservation forest.
3. Please refer the list of recommendations in the main report for additional recommendations.

Annex 2a. The list of plant species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **I** - Introduced, **N** - Native. **CS** - Conservation Status (National Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** - Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** - Vulnerable. **D97-106**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	D112	D113	D114	D115	D116	D117	D118	D119	D120	D121	D122	D123	D124
1	Acanthaceae	<i>Asystasia gangetica</i>	පුරුක්	N	LC				1					1		1		
2	Acanthaceae	<i>Asystasia variabilis</i>	ගඳ පුරුක්	N	LC		1	1										
3	Acanthaceae	<i>Barleria arnottiana</i> var. <i>arnottiana</i>		N	EN							1						
4	Acanthaceae	<i>Phaulopsis dorsiflora</i>		N	NT	1												
5	Acanthaceae	<i>Strobilanthes adenophora</i>	තෙළු	E	VU				1			1						1
6	Acanthaceae	<i>Strobilanthes lupulina</i>	තෙළු	N	LC								1			1		1
7	Achariaceae	<i>Erythrospermum zeylanicum</i>	දොඩන්වැන්න, දොඩම්පතා	E	LC		1					1						
8	Achariaceae	<i>Hydnocarpus venenatus</i>	මකුල්ල	E	LC		1											
9	Amaranthaceae	<i>Cyathula prostrata</i>	බිම් කරල් හැබ	N	VU		1								1			
10	Amaryllidaceae	<i>Hippeastrum puniceum</i>	වල් එළඹු	I	NE	1												
11	Anacardiaceae	<i>Mangifera indica</i>	අඹ	I	NE							1					1	
12	Annonaceae	<i>Artabotrys zeylanicus</i>	කළු බඹර වැල්	N	LC								1					1
13	Annonaceae	<i>Monoon acuminatum</i>	ඉනිපෙන්නු, ඉපෙන්නු, මලොළ, මල් ලාවුළු	E	LC							1						1
14	Annonaceae	<i>Uvaria sphenocarpa</i>		E	LC		1											
15	Annonaceae	<i>Xylopia patoniae</i>	අතුකැටිය, නැටවු	N	LC							1						
16	Apiaceae	<i>Centella asiatica</i>	ගොටුකොළ, ජීන් ගොටුකොළ,	N	LC								1					

	Family	Scientific Name	Common Name	DS	CS	D112	D113	D114	D115	D116	D117	D118	D119	D120	D121	D122	D123	D124
55	Commelinaceae	<i>Murdannia spirata</i> var. <i>spirata</i>		N	LC						1							
56	Convolvulaceae	<i>Argyreia thwaitesii</i>	මා බඳ, ගිරිකිල්ල	E	LC						1							
57	Convolvulaceae	<i>Camonea pilosa</i>	කීර් මදු, මහ මදු	N	LC		1									1		
58	Costaceae	<i>Costus afer</i>		I	NE									1		1		
59	Costaceae	<i>Hellenia speciosa</i>	තෙඹු	N	LC						1					1		1
60	Crassulaceae	<i>Kalanchoe pinnata</i>	අක්කපාන	I	NE										1			
61	Crypteroniaceae	<i>Axinandra zeylanica</i>	පොල් හූන	E	NT							1						
62	Dilleniaceae	<i>Dillenia retusa</i>	ගොඬපර	N	LC		1					1						
63	Dilleniaceae	<i>Dillenia suffruticosa</i>	පර	I	NE											1		
64	Dilleniaceae	<i>Tetracera sarmentosa</i>	කොරොස වැල්	N	LC		1					1				1		
65	Dioscoreaceae	<i>Trichopus zeylanicus</i>	බිම් පොල්	N	VU		1											
66	Ebenaceae	<i>Diospyros insignis</i>	ගෝන, පොරොව මාර, වල් මැදිරිය	N	LC							1						
67	Ebenaceae	<i>Diospyros koenigii</i>		E	CR		1											
68	Elaeocarpaceae	<i>Elaeocarpus serratus</i>	වෙරළ	N	LC								1					
69	Elaeocarpaceae	<i>Elaeocarpus subvillosus</i>	ගල් වෙරළ	E	NT							1						
70	Eriocaulaceae	<i>Eriocaulon thwaitesii</i>		N	VU								1		1			
71	Euphorbiaceae	<i>Croton aromaticus</i>	වැල් කැප්පෙටියා	N	LC		1					1						1
72	Euphorbiaceae	<i>Croton hirtus</i>	ගං වෙද	I	NE		1								1			
73	Euphorbiaceae	<i>Euphorbia hirta</i>	බු දද කීරිය, කීරි නලා	I	NE	1												
74	Euphorbiaceae	<i>Euphorbia thymifolia</i>	බිම් දද කීරිය	I	NE	1												
75	Euphorbiaceae	<i>Hevea brasiliensis</i>	රබර්	I	NE			1	1		1		1					1
76	Euphorbiaceae	<i>Macaranga indica</i>	බු කැන්ද	N	LC							1						
77	Euphorbiaceae	<i>Macaranga peltata</i>	කැන්ද	N	LC	1	1	1		1	1	1	1		1	1		1
78	Euphorbiaceae	<i>Mallotus tetracoccus</i>	බු කැන්ද	N	LC		1			1						1		

	Family	Scientific Name	Common Name	DS	CS	D112	D113	D114	D115	D116	D117	D118	D119	D120	D121	D122	D123	D124
79	Fabaceae	<i>Calopogonium mucunoides</i>		I	NE			1										
80	Fabaceae	<i>Centrosema pubescens</i>		I	NE	1		1										
81	Fabaceae	<i>Dalbergia rostrata</i>	බඹර වැල්	N	LC													1
82	Fabaceae	<i>Flemingia macrophylla</i>	වල් උඳු	N	CR								1					
83	Fabaceae	<i>Gliricidia sepium</i>	වැටමාර	I	NE										1			
84	Fabaceae	<i>Grona heterocarpa</i>	අන් උඳුපියලිය	N	VU	1		1	1	1			1	1	1			
85	Fabaceae	<i>Grona heterophylla</i>	මහ උඳුපියලිය	N	LC			1					1		1			1
86	Fabaceae	<i>Humboldtia laurifolia</i>	ගල් කරඳ	E	LC									1				
87	Fabaceae	<i>Mimosa diplotricha</i> var. <i>diplotricha</i>	වැල් නිදිකුම්බා	I	NE										1			
88	Fabaceae	<i>Mimosa pudica</i>	නිදිකුම්බා	I	NE	1							1	1	1			
89	Fabaceae	<i>Neustanthus phaseoloides</i>	පෝර වැල්	I	NE			1	1	1	1		1	1	1	1		
90	Fabaceae	<i>Senna alata</i>	අන් තෝර	I	NE									1				
91	Fabaceae	<i>Senna occidentalis</i>	පැණි තෝර, හිවල් තෝර	I	NE									1				
92	Fabaceae	<i>Senna tora</i>	පෙනි තෝර	I	NE								1					
93	Fabaceae	<i>Vigna hosei</i>		I	NE			1						1				
94	Hypoxidaceae	<i>Curculigo orchioides</i>	බිම් තල්	N	LC		1											
95	Lamiaceae	<i>Clerodendrum infortunatum</i>	ගස් පින්න, පින්න	N	LC							1	1					
96	Lamiaceae	<i>Hyptis capitata</i>		I	NE	1	1		1					1		1		1
97	Lamiaceae	<i>Leucas zeylanica</i>	ගල තුඹ	N	LC										1			
98	Lamiaceae	<i>Vitex altissima</i>	මිල්ල	N	NT		1											1
99	Lauraceae	<i>Cinnamomum verum</i>	කුරුඳු, පන් කුරුඳු	E	VU									1				
100	Lauraceae	<i>Cryptocarya wightiana</i>	ගල් මොර, ගුළු මොර	N	NT							1						

	Family	Scientific Name	Common Name	DS	CS	D112	D113	D114	D115	D116	D117	D118	D119	D120	D121	D122	D123	D124
101	Lauraceae	<i>Litsea longifolia</i>	රන් කැලිය	E	DD		1					1				1		1
102	Lauraceae	<i>Neolitsea cassia</i> var. <i>cassia</i>	දවුල් කුරුඳු	N	LC							1						
103	Lecythidaceae	<i>Barringtonia racemosa</i>	දිය මිදෙල්ල	N	LC									1				
104	Lentibulariaceae	<i>Utricularia bifida</i>	කහ ඉන්දින් තරු	N	NT										1			
105	Lentibulariaceae	<i>Utricularia caerulea</i>	නිල් මොණරුස්ස	N	LC										1			
106	Linaceae	<i>Hugonia ferruginea</i>		N	VU		1											
107	Linderniaceae	<i>Vandellia diffusa</i>		I	NE		1											1
108	Linderniaceae	<i>Vandellia pusilla</i>		N	LC								1					
109	Loganiaceae	<i>Strychnos wallichiana</i>	ඇට කිරිදි වැල්, වැල් බෙලි	N	NT							1						
110	Loranthaceae	<i>Dendrophthoe falcata</i>	දෙළුම් පිළිල	N	LC											1		
111	Malvaceae	<i>Hibiscus hispidissimus</i>		N	LC													1
112	Malvaceae	<i>Sida rhombifolia</i> subsp. <i>rhombifolia</i>	කොටිකන් බැබිල	N	LC					1			1					1
113	Malvaceae	<i>Urena lobata</i>	පර්ව ඇපල	N	LC	1					1		1	1	1			
114	Malvaceae	<i>Bombax ceiba</i>	කටු ඉඹුල්	N	LC		1											
115	Malvaceae	<i>Grewia carpinifolia</i>	වැල් කැලිය, වැල් මැදිය	N	LC		1					1						
116	Malvaceae	<i>Triumfetta pentandra</i>	ඇපල, කපු කිනිස්ස	N	LC					1			1					
117	Melastomataceae	<i>Heterotis rotundifolia</i>		I	NE					1								
118	Melastomataceae	<i>Melastoma malabathricum</i>	මහ බෝවිටියා	N	LC					1	1		1			1		1
119	Melastomataceae	<i>Memecylon umbellatum</i>	කොර කහ	N	LC		1						1					
120	Melastomataceae	<i>Miconia crenata</i>	කටකළු බෝවිටියා	I	NE	1			1		1							
121	Melastomataceae	<i>Osbeckia octandra</i>	හීන් බෝවිටියා	E	LC								1					

	Family	Scientific Name	Common Name	DS	CS	D112	D113	D114	D115	D116	D117	D118	D119	D120	D121	D122	D123	D124
146	Phyllanthaceae	<i>Antidesma alexiteria</i>	හීන් ඇඹිල්ල	N	LC							1						
147	Phyllanthaceae	<i>Aporosa cardiosperma</i>	කැබැල්ල	N	LC		1											
148	Phyllanthaceae	<i>Aporosa lanceolata</i>	හීන් කැබැල්ල	E	LC							1						
149	Phyllanthaceae	<i>Breynia androgyna</i>	ජපන් බටු	N	LC		1				1					1		
150	Phyllanthaceae	<i>Bridelia moonii</i>	පත් කැල	E	LC							1				1		1
151	Phyllanthaceae	<i>Glochidion nemorale</i> var. <i>moonii</i>	බු හුණුකිරිල්ල	E	LC								1					1
152	Phyllanthaceae	<i>Phyllanthus urinaria</i>	රන් පිටවක්කා	N	LC	1		1							1			
153	Piperaceae	<i>Piper fallax</i>	වල් ගම්මිරිස්	N	LC							1						
154	Plantaginaceae	<i>Limnophila repens</i>	අඹ වීල, සඹ වීල	N	LC								1					
155	Plantaginaceae	<i>Scoparia dulcis</i>	වල් කොත්තමල්ලි	I	NE									1				
156	Poaceae	<i>Axonopus compressus</i>	පොතු තණ	I	NE	1		1					1					
157	Poaceae	<i>Ochlandra stridula</i>	බට	E	LC		1					1	1	1		1		1
158	Poaceae	<i>Urochloa maxima</i>	ගිණි තණ	I	NE						1							
159	Polygalaceae	<i>Xanthophyllum</i> <i>zeylanicum</i>	පලල	E	LC							1						
160	Rhamnaceae	<i>Gouania microcarpa</i>		N	NT		1					1						
161	Rhamnaceae	<i>Ventilago gamblei</i>		N	LC		1											
162	Rhamnaceae	<i>Ziziphus oenopolia</i>	හීන් එරමිණියා	N	LC					1	1		1			1		
163	Rhamnaceae	<i>Ziziphus rugosa</i>	මහ එරමිණියා	N	NT						1	1						
164	Rhizophoraceae	<i>Carallia brachiata</i>	දුවට	N	LC							1						1
165	Rubiaceae	<i>Exallage auricularia</i> subsp. <i>auricularia</i>	ගැට කොළ	N	LC	1		1	1				1			1		
166	Rubiaceae	<i>Gaertnera vaginans</i>	පේර තඹල	E	LC		1					1						
167	Rubiaceae	<i>Hedyotis fruticosa</i>	වැරණිය	N	LC								1					1
168	Rubiaceae	<i>Mitracarpus hirtus</i>		I	NE	1												
169	Rubiaceae	<i>Ophiorrhiza mungos</i>	දන් කැටිය	N	LC		1											
170	Rubiaceae	<i>Psychotria sarmentosa</i>	වල් ගොනිකා	N	NT		1					1						

	Family	Scientific Name	Common Name	DS	CS	D112	D113	D114	D115	D116	D117	D118	D119	D120	D121	D122	D123	D124
171	Rubiaceae	<i>Scyphostachys coffeoides</i>	වල් කෝපි	E	EN							1						
172	Rubiaceae	<i>Spermacoce latifolia</i>		I	NE	1		1	1				1	1	1			
173	Rubiaceae	<i>Spermacoce ocymifolia</i>		I	NE	1		1										
174	Rubiaceae	<i>Tarenna asiatica</i>	තරණ	N	LC		1											
175	Rubiaceae	<i>Uncaria elliptica</i>		N	LC							1	1					
176	Rutaceae	<i>Acronychia pedunculata</i>	අත්කෝන්ද	N	LC							1						
177	Rutaceae	<i>Clausena indica</i>	මී ගොං කරපිංචා	N	LC		1											
178	Rutaceae	<i>Glycosmis mauritiana</i>		N	LC							1						
179	Rutaceae	<i>Melicope lunu-ankenda</i>	ලුණු අත්කෝන්ද	N	LC							1				1		
180	Rutaceae	<i>Paramignya monophylla</i> var. <i>monophylla</i>	වෙල්ලංගිරිය, යකා බැඳි වැල්	N	LC							1						
181	Rutaceae	<i>Toddalia asiatica</i>	කුඩුමිරිස්ස	N	LC		1											1
182	Sapindaceae	<i>Allophylus cobbe</i>	කොබ්බෑ	N	LC		1		1		1							
183	Sapindaceae	<i>Dimocarpus longan</i>	මොර, රස මොර, පැණි මොර	N	LC													1
184	Sapindaceae	<i>Nephelium lappaceum</i>	රඹුටන්	I	NE							1		1		1		
185	Simaroubaceae	<i>Brucea javanica</i>	නින්ත කොහොඹ	N	LC						1							
186	Smilacaceae	<i>Smilax perfoliata</i>	මහ කබරස	N	LC							1						
187	Staphyleaceae	<i>Turpinia malabarica</i>	ඇට හිරිල්ල, කන්කුඹල, ගෙරිය, කුකුලුමාන්	N	LC													1
188	Symplocaceae	<i>Symplocos acuminata</i>	බෝඹු	N	LC		1	1		1		1		1		1		
189	Verbenaceae	<i>Lantana camara</i>	ගඳපාන	I	NE	1					1				1			

	Family	Scientific Name	Common Name	DS	CS	D112	D113	D114	D115	D116	D117	D118	D119	D120	D121	D122	D123	D124
190	Verbenaceae	<i>Stachytarpheta cayennensis</i>		I	NE	1												
191	Verbenaceae	<i>Stachytarpheta jamaicensis</i>	බලුනකුට	I	NE								1					
192	Vitaceae	<i>Cyphostemma trilobata</i>		N	LC		1											
193	Vitaceae	<i>Tetrastigma nilagiricum</i>		N	LC		1											
194	Zingiberaceae	<i>Curcuma zedoaria</i>	හරන් කහ	I	NE									1				

Annex 2b. The list of animal species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **N** - Native, **I** - Introduced, **M** - Migrant. **CS** - Conservation Status (National Conservation Status or * Global Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** - Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** - Vulnerable. **D###**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	D112	D113	D114	D115	D116	D117	D118	D119	D120	D121	D122	D123	D124
Dragonflies																		
1	Chlorocyphidae	<i>Libellago greeni</i>	Green's Gem	E	LC*				1							1		
2	Euphaeidae	<i>Euphaea splendens</i>	Shining Gossamerwing	E	LC*											1	1	1
3	Coenagrionidae	<i>Agriocnemis pygmaea</i>	Wandering Wisp	N	LC										1			
4	Platycnemididae	<i>Copera marginipes</i>	Yellow Featherleg	N	LC									1				
5	Platycnemididae	<i>Elattoneura oculata</i>	Two-spotted threadtail	E	VU*								1	1				

	Family	Scientific Name	Common Name	DS	CS	D112	D113	D114	D115	D116	D117	D118	D119	D120	D121	D122	D123	D124
6	Platycnemididae	<i>Elattoneura centralis</i>	Dark-glittering Threadtail	E	LC*			1										
7	Platycnemididae	<i>Prodasineura sita</i>	Stripe-headed Threadtail	E	LC*				1	1								
8	Platystictidae	<i>Ceylonosticta brincki</i>	Brinck's Shadowdamsel	E	LC*						1						1	
9	Gomphidae	<i>Megalogomphus ceylonicus</i>	Sri Lanka Sabretail	E	VU*				1									
10	Libellulidae	<i>Orthetrum chrysis</i>	Spine-tufted Skimmer	N	VU			1	1		1							
11	Libellulidae	<i>Orthetrum glaucum</i>	Asian Skimmer	N	NT			1	1	1	1		1	1				
12	Libellulidae	<i>Orthetrum sabina</i>	Green Skimmer	N	LC								1	1				
13	Libellulidae	<i>Acisoma panorpoides</i>	Asian Pintail	N	LC								1	1				
14	Libellulidae	<i>Neurothemis tullia</i>	Pied Parasol	N	LC								1	1				
15	Libellulidae	<i>Trithemis festiva</i>	Indigo Dropwing	N	VU				1				1	1				
16	Libellulidae	<i>Pantala flavescens</i>	Wandering Glider	N	LC										1			
Butterflies																		
1	Papilionidae	<i>Papilio polytes</i>	Common Mormon	N	LC						1							
2	Papilionidae	<i>Papilio polymnestor</i>	Blue Mormon	N	LC						1							
3	Papilionidae	<i>Papilio clytia</i>	Mime	N	LC				1									
4	Papilionidae	<i>Graphium agamemnon</i>	Tailed Jay	N	LC						1							
5	Pieridae	<i>Leptosia nina</i>	Psyche	N	LC	2			1	1								1
6	Pieridae	<i>Delias eucharis</i>	Jezebel	N	LC	1	1						1	1	1			
7	Pieridae	<i>Catopsilia pomona</i>	Lemon EM	N	LC							1	1					
8	Pieridae	<i>Catopsilia pyranthe</i>	Mottled EM	N	LC		1					1	1					
9	Pieridae	<i>Eurema hecabe</i>	Common Grass Yellow	N	LC				2	1	1							
10	Nymphalidae	<i>Euploea core</i>	Common Crow	N	LC				1			1						
11	Nymphalidae	<i>Phalanta phalantha</i>	Common Leopard	N	LC							1						

	Family	Scientific Name	Common Name	DS	CS	D112	D113	D114	D115	D116	D117	D118	D119	D120	D121	D122	D123	D124
12	Nymphalidae	<i>Cirrochroa thais</i>	Tamil Yeoman	N	LC							1						
13	Nymphalidae	<i>Junonia atlites</i>	Grey Pansy	N	LC	1					1							
14	Nymphalidae	<i>Junonia iphita</i>	Chocolate Soldier	N	LC			1		2	1	1	1					
15	Nymphalidae	<i>Neptis hylas</i>	Common Sailor	N	LC		1	1	1	1	1	1	1	1				
16	Nymphalidae	<i>Ypthima ceylonica</i>	White Four-ring	N	LC	1	1		1	6		2	1		3	1	1	1
17	Lycaenidae	<i>Everes lacturnus</i>	Indian Cupid	N	LC				1		1	1	1					
18	Lycaenidae	<i>Jamides bochus</i>	Dark Cerulean	N	LC			1		1	1							
19	Lycaenidae	<i>Jamides celeno</i>	Common Cerulean	N	LC		1	1	1		1	1		1				
20	Lycaenidae	<i>Catochrysops panormus</i>	Silver Forget-me-not	N	CR								1					
21	Lycaenidae	<i>Discolampa ethion</i>	Banded Blue Pierrot	N	LC					1		1						
22	Lycaenidae	<i>Caleta decidia</i>	Angled Pierrot	N	LC	1	1					1	1					
23	Lycaenidae	<i>Talicara nyseus</i>	Red Pierrot	N	LC										2			
24	Lycaenidae	<i>Zizina otis</i>	Lesser Grass Blue	N	LC		1								1	1		
25	Lycaenidae	<i>Zizula hylax</i>	Tiny Grass Blue	N	LC	1												
26	Lycaenidae	<i>Acytolepis puspa</i>	Common Hedge Blue	N	LC								1					
27	Lycaenidae	<i>Neopithecops zalmora</i>	Quaker	N	LC							1						
28	Lycaenidae	<i>Chilades pandava</i>	Plains Cupid	N	LC	1												
29	Hesperiidae	<i>Spialia galba</i>	Grizzled Skipper	N	LC					1								
30	Hesperiidae	<i>Ampittia dioscorides</i>	Bush Hopper	N	LC		1					1	1					
31	Hesperiidae	<i>Halpe ceylonica</i>	Sri Lankan Ace	E	EN									1				
32	Hesperiidae	<i>Iambrix salsala</i>	Chestnut Bob	N	LC	2	1	1			1	1	1	1				1
33	Hesperiidae	<i>Taractrocera maevius</i>	Common Grass Dart	N	LC				1									
Freshwater Fish																		
1	Cyprinidae	<i>Dawkinsia filamentosa</i>	Sri Lanka Filamented Barb	N	LC				1		1		1	1		6		

	Family	Scientific Name	Common Name	DS	CS	D112	D113	D114	D115	D116	D117	D118	D119	D120	D121	D122	D123	D124
2	Cyprinidae	<i>Garra ceylonensis</i>	Sri Lanka Stone Sucker	E	NT				1								1	1
3	Cyprinidae	<i>Puntius bimaculatus</i>	Redside Barb	N	LC				1		1		1	6		1		
4	Cyprinidae	<i>Puntius dorsalis</i>	Long-Snouted Barb	N	LC				1		1					1		
5	Cyprinidae	<i>Puntius kelumi</i>	Sri Lanka Redeye Barb	E	EN											8		
6	Cyprinidae	<i>Puntius titteya</i>	Sri Lanka Cherry Barb	E	VU						1	1	1					
7	Cyprinidae	<i>Systemus pleurotaenia</i>	Sri Lanka Black-Lined Barb	E	VU				1									
8	Danionidae	<i>Devario malabaricus</i>	Giant Danio	N	LC				1		1		1	3		2	1	1
9	Danionidae	<i>Rasbora dandia</i>	Broad line Striped Rasbora	N	LC				1		1		1	1		1		
10	Nemacheilidae	<i>Paracanthocobitis urophthalma</i>	Sri Lanka Tiger Loach	E	EN						1							
11	Nemacheilidae	<i>Schistura notostigma</i>	Sri Lanka Banded Mountain Loach	E	NT						2		1			1	1	1
12	Cobitidae	<i>Lepidocephalichthys thermalis</i>	Common Spiny Loach	N	LC				1									
13	Gobiidae	<i>Awaous melanocephalus</i>	Scribbled Goby	N	LC				1									
14	Mastacembelidae	<i>Mastacembelus armatus</i>	Marbled Spiny Eel	N	LC											1		
15	Channidae	<i>Channa cf. ara</i>	Wetzone Giant snakehead	E	NE									1				
16	Channidae	<i>Channa kelaartii</i>	Brown Snakehead	N	NT				1			1	8					
17	Channidae	<i>Channa orientalis</i>	Smooth-Breasted Snakehead	E	VU						2						1	1
18	Aplocheilidae	<i>Aplocheilus dayi</i>	Sri Lanka Day's Killifish	E	EN				1			1	5					

	Family	Scientific Name	Common Name	DS	CS	D112	D113	D114	D115	D116	D117	D118	D119	D120	D121	D122	D123	D124
19	Belontiidae	<i>Belontia signata</i>	Sri Lanka Combtail	E	VU				1		1		1	8		2	1	
Amphibians																		
1	Ranidae	<i>Indosylvirana temporalis</i>	Bronzed frog	E	NT*		1											
2	Dicroglossidae	<i>Nannophrys ceylonensis</i>	Sri Lanka rock frog	E	VU*		1								1			
3	Nictibatrachidae	<i>Lankanectes corrugatus</i>	Corrugated water frog	E	NT*		1				1						1	
4	Rhacophoridae	<i>Pseudophilautus folicola</i>	Leaf dwelling shrub frog	E	VU*		1											
5	Rhacophoridae	<i>Pseudophilautus popularis</i>	Common shrub frog	E	VU*		1											
6	Rhacophoridae	<i>Pseudophilautus stictomerus</i>	Orange canthal shrub frog	E	VU*		1											
Reptiles																		
1	Agamidae	<i>Calotes calotes</i>	Green forest Lizard	N	LC								1	1		1		
2	Agamidae	<i>Calotes versicolor</i>	Garden Lizard	N	LC	1									1	1		
3	Agamidae	<i>Otocryptis wiegmanni</i>	Sri Lankan Kangaroo Lizard	E	LC*		1					1				1	1	1
4	Scincidae	<i>Lankascincus dorsicatenatus</i>	Catenated lanka skink	E	LC*		1											
5	Scincidae	<i>Eutropis carinata</i>	Common Skink	N	LC			1								1		
6	Colubridae	<i>Ptyas mucosa</i>	Sri Lankan Rat Snake	N	LC			1										
7	Elapidae	<i>Naja naja</i>	Indian Cobra	N	LC*			1										
Birds																		
1	Accipitridae	<i>Ictinaetus malayensis</i>	Black Eagle	N	NT										1			
2	Accipitridae	<i>Spizaetus cirrhatus</i>	Changeable Hawk-eagle	N	LC			1										
3	Accipitridae	<i>Spilornis cheela</i>	Crested Serpent-eagle	N	LC		1	1							1			

	Family	Scientific Name	Common Name	DS	CS	D112	D113	D114	D115	D116	D117	D118	D119	D120	D121	D122	D123	D124
4	Accipitridae	<i>Pernis ptilorhynchus</i>	Oriental Honey-buzzard	N	NT					1								
5	Accipitridae	<i>Accipiter badius</i>	Shikra	N	LC									1				
6	Columbidae	<i>Ducula aenea</i>	Green Imperial-Pigeon	N	LC										1			
7	Columbidae	<i>Stigmatopelia chinensis</i>	Spotted Dove	N	LC	1					1	1			1		1	
8	Psittacidae	<i>Psittacula eupatria</i>	Alexandrine Parakeet	N	LC										1		d	
9	Psittacidae	<i>Psittacula krameri</i>	Rose-ringed Parakeet	N	LC					1								
10	Psittacidae	<i>Loriculus beryllinus</i>	Sri Lanka Hanging Parrot	E	LC	1	1	1	1	1				1				1
11	Cuculidae	<i>Centropus sinensis</i>	Greater Coucal	N	LC	1			1			1			1			
12	Apodidae	<i>Collocalia unicolor</i>	Indian Swiftlet	N	LC			1										
13	Apodidae	<i>Apus affinis</i>	Little Swift	N	LC												5	
14	Hemiprocnidae	<i>Hemiproctne coronata</i>	Crested Treeswift	N	LC			1			1							
15	Alcedinidae	<i>Alcedo atthis</i>	Common Kingfisher	N	LC									1				
16	Alcedinidae	<i>Halcyon smyrnensis</i>	White-throated Kingfisher	N	LC	1			1		1		1			1	1	
17	Meropidae	<i>Merops leschenaulti</i>	Chestnut-headed Bee-eater	N	LC					1				1				
18	Meropidae	<i>Merops philippinus</i>	Blue-tailed Bee-eater	M	LC*										1			
19	Bucerotidae	<i>Ocyrceros gingalensis</i>	Sri Lanka Grey Hornbill	E	LC	1												
20	Ramphastidae	<i>Megalaima zeylanica</i>	Brown-headed Barbet	N	LC	1									1			
21	Ramphastidae	<i>Megalaima rubricapillus</i>	Sri Lanka Barbet	E	LC					1		1		1			1	
22	Ramphastidae	<i>Megalaima flavifrons</i>	Sri Lanka Yellow-fronted Barbet	E	LC	1	1	1	1	1	1	1	1	1			1	
23	Picidae	<i>Dinopium psarodes</i>	Lesser Sri Lanka Flameback	E	LC	1			1						1			

	Family	Scientific Name	Common Name	DS	CS	D112	D113	D114	D115	D116	D117	D118	D119	D120	D121	D122	D123	D124
44	Timaliidae	<i>Dumetia hyperythra</i>	Tawny-bellied Babbler	N	LC	1												
45	Timaliidae	<i>Turdoides affinis</i>	Yellow-billed Babbler	N	LC	1		1										
46	Zosteropidae	<i>Zosterops palpebrosus</i>	Oriental White Eye	N	LC		1		1	1	1	1	1		1		1	
47	Sturnidae	<i>Acridotheres tristis</i>	Common Myna	N	LC	1												
48	Sturnidae	<i>Gracula religiosa</i>	Hill Myna	N	LC								1			2	1	4
49	Muscicapidae	<i>Cyornis tickelliae</i>	Tickell's Blue Flycatcher	N	LC	1	1		1									
50	Muscicapidae	<i>Muscicapa dauurica</i>	Asian Brown Flycatcher	M	LC*			1										
51	Chloropseidae	<i>Chloropsis jerdoni</i>	Jerdon's Leafbird	N	LC	1	1									1		
52	Dicaeidae	<i>Dicaeum erythrorhynchos</i>	Pale-billed Flowerpecker	N	LC		1	1	1		1							1
53	Nectariniidae	<i>Nectarinia zeylonica</i>	Purple-rumped Sunbird	N	LC	1		1	1	1		1		1		1		
54	Motacillidae	<i>Motacilla cinerea</i>	Grey Wagtail	M	LC*					1								
Mammals																		
1	Manidae	<i>Manis crassicaudata</i>	Pangolin	N	NT							1						
2	Cercopithecidae	<i>Semnopithecus vetulus</i>	Sri Lanka Purple-faced langur	E	EN	1			1	1								
3	Cervidae	<i>Muntiacus muntjak</i>	Barking deer	N	NT													1
4	Suidae	<i>Sus scrofa</i>	Wild boar	N	LC			1	1	1								
5	Tragulidae	<i>Moschiola meminna</i>	Sri Lanka mouse-deer	N	LC													1
6	Hystricidae	<i>Hystrix indica</i>	Porcupine	N	LC	1									1			1
7	Sciuridae	<i>Funambulus palmarum</i>	Palm squirrel	N	LC	1												
8	Mustelidae	<i>Lutra lutra</i>	Otter	N	VU					1		1	1	1		1	1	

Densworth Estate

1. Introduction

Densworth Estate is managed under the Mahaoya Group of Lalan Rubbers Pvt. Ltd. It is located in the Kegalle District and has a total extent of 331.85 ha. The estate is managed as a single division and the primary crops grown are rubber and oil palm. The extent of conservation areas in the estate is 39.32 ha. There are two HCV sites that are important for the provision of freshwater and conservation of biodiversity present in the estate.

Densworth estate is located in the wet climatic zone of the country. Ecologically the area is near the conjunction of three floristic zones, i.e., Northern Wet Lowland Floristic Zone, Sinharaja and Rathnapura Floristic Zone and Foothills of Adam's Peak and Ambagamuwa Floristic Zone. The estate is located in the catchment and Seethawaka Ganga, a tributary of the Kelani river that flows towards the south and west of the estate.

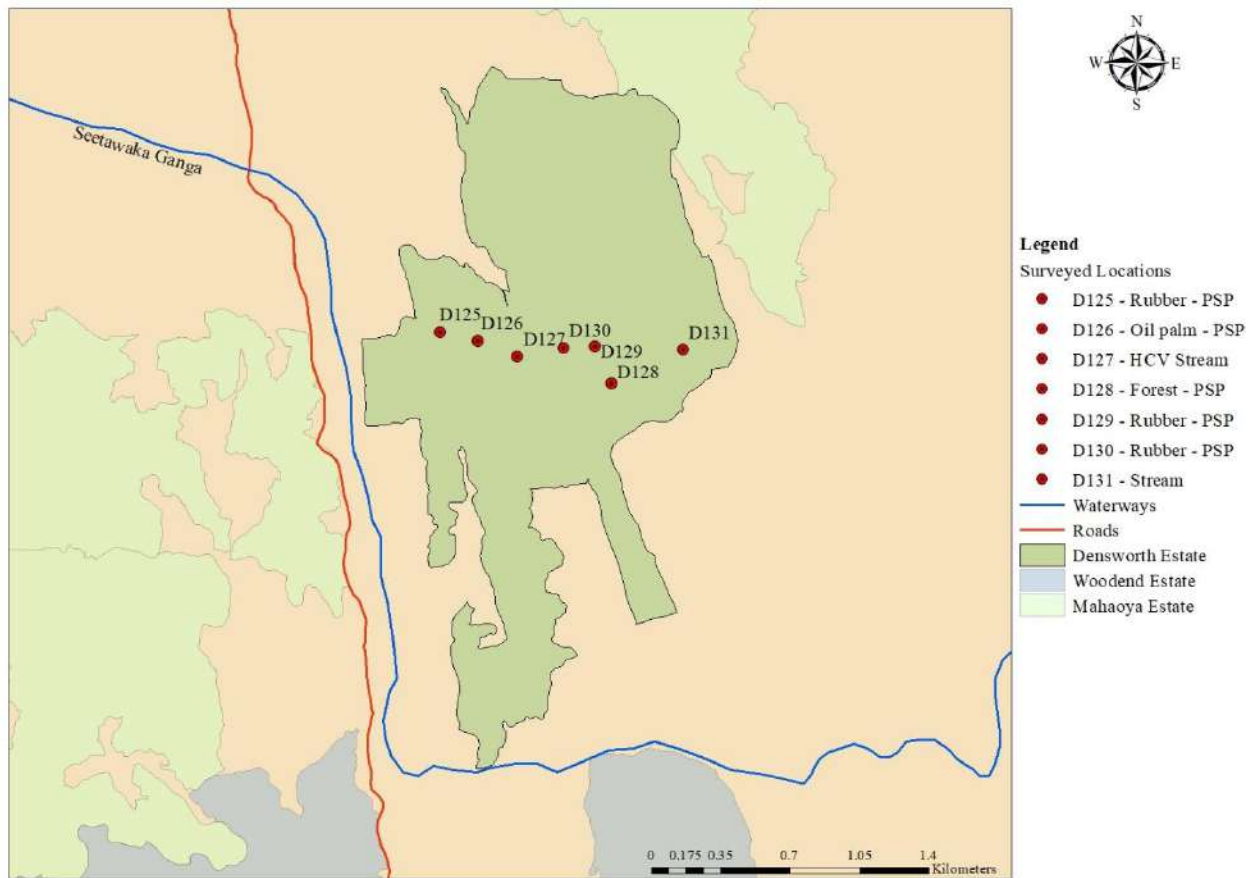


Figure 1. Map of the Densworth Estate and the distribution of the permanent sampling plots.

2. Methodological approach

2.1 Study locations: Altogether, 7 sampling sites were surveyed in Densworth Division. These includes one Conservation Forest site, PSPs in Rubber and Oil Palm, and two streams. A summary of locations sampled are given in Table 1 and the distribution of the sampling plots within the Densworth estate is shown in Figure 1.

Table 1. The number of sites sampled within the Densworth Estate

Division	Site	Site type	Site code	Latitude	Longitude	Ele. (m)
Densworth	Rubber 1989 / 2021	Rubber - PSP	D125	6.94471	80.27631	63
	OP1	Oil palm - PSP	D126	6.94432	80.27803	53
	2010/2012/2017 OP HCV Stream	Stream	D127	6.94360	80.27984	38
	Conservation Forest/Rusty spotted cat HCV/Rubber 1971 HCV Catchment	Forest - PSP	D128	6.94237	80.28410	127
	Rubber 2000	Rubber - PSP	D129	6.94406	80.28336	79
	Rubber 2010	Rubber - PSP	D130	6.94400	80.28194	72
	Rubber 2002/2004/ 2012 Stream	Stream	D131	6.94390	80.28737	52

2.2 Study Period: This study was undertaken in January 2022 covering the dry season of the area and the bird migratory season.

2.3 Study techniques: Please refer Chapter 1

3. Key Findings of the Biodiversity Assessment

Based on the results of the assessments conducted in the Densworth estate 101 species of plants and 105 species of animals were recorded. This included 27 species of endemic fauna, 7 species of endemic flora, 15 species of threatened fauna and 7 species of threatened flora. A summary of the species recorded under different taxonomic groups are presented in table 2. The detailed list of plants and animals observed during this study including their distribution and threat status is given in Annex 2a and 2b.

Table 2. Summary of the total fauna and flora recorded during the assessment.

Abbreviations used: CR - Critically Endangered; EN - Endangered; VU – Vulnerable, NT - Near Threatened, DD – Data Deficient.

Taxa	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Dragonflies	9	3	-	-	-	1	-	-
Butterflies	24	2	-	1	-	1	1	-
Freshwater Fish	18	10	1	-	4	4	3	-
Amphibians	1	-	-	-	-	-	-	-
Reptiles	6	4	-	-	1	-	-	-
Birds	41	7	5*	-	-	-	1	-
Mammals	6	1	-	-	1	2	-	-
Sub-Total (Fauna)	105	27	6*	1	6	8	5	0
Plants	101	7	36	1	-	6	3	1
Total (Species)	206	34	37	2	6	14	8	1

4. Important Findings of the Assessment

4.1. Critical Species

1. Redfin Two-banded Carplet (*Pethia reval*)

This fish inhabits medium to large streams with a low shade level and a muddy substrate. It usually occupies the mid water column near the stream banks. Omnivorous in habits it grows up to about 5 cm in length. It is an endemic and Endangered species. In Densworth, it was observed in the HCV Stream 2010/2012/2017 in the Oil Palm field (Site D127).



Redfin Two-banded Carplet. Image: TR

2. Sri Lanka Tiger Loach (*Paracanthocobitis urophthalma*)

Tiger Loach is an omnivorous bottom feeder that occurs in small to large streams. They occupy a wide range of habitats including muddy substrate to pebbles substrate. The species is endemic to Sri Lanka and distributed in the low country wet zone. It is listed as an Endangered species. The species was recorded in the HCV Stream 2010/2012/2017 in the Oil Palm field (Site D127).



Sri Lanka Tiger Loach. Image: TR

3. Sri Lanka Dwarf Catfish (*Mystus ankutta*)

Dwarf Catfish prefers well shaded slow flowing streams with leaf litter in the substrate. They are nocturnal and carnivorous bottom feeders. The species is Endemic to Sri Lanka and is known to occur only in the wet zone of the country. The species listed as an Endangered

species. At Densworth, it was observed in the stream running along Rubber 2002/2004/2012 fields (Site D131).



Mystus ankutta. Image: TR

4.2. Critical Habitats

1. HCV Stream in 2010/2012/2017 Oil Palm fields

This HCV stream (Site D127) is an important habitat for a number of threatened and endemic freshwater fauna. This included Redfin Two-banded Carplet, Tiger Loach, Red-fin Barb listed as Endangered species and Black Ruby Barb, Cherry Barb and Combtail listed as Vulnerable species. In addition to the fish fauna, the Sri Lanka Cruiser, a dragonfly listed as Vulnerable was also observed here.



HCV Stream in 2010/2012/2017 Oil Palm field (Site D127)

5. Conclusions and Recommendations

Results of the present assessment indicates that the total species richness and the number of endemic and threatened species recorded remains equal or higher in most instances compared to previous survey done in 2016. It should be noted that some of the species recorded during the previous assessments have not been recorded during the present survey and number of new species including endemic and threatened species have been newly recorded during the present assessment. Therefore, based on this data it can be safely concluded that the species richness as well as number of critical species (endemic and threatened species) have not undergone a decline between the two assessments.

Based on the findings of this assessment and the field observations the following set of recommendations can be made.

1. Medium to large streams in the lowland areas such as the HCV stream in 2010/2012/2017 in the Oil Palm field should be given an increased attention as they provide habitat for number of threatened aquatic biodiversity found in the landscape.
2. The introduced, invasive alien fish Tilapia was also observed in the stream running along the Rubber 2002/2004/2012 fields (Site D131). As it can have a negative impact on the local fish diversity, it is recommended to monitor its abundance and spread, and take actions to remove the species completely from the stream.
3. Please refer the list of general recommendations given in main report for additional recommendations.

Annex 2a. The list of plant species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **I** - Introduced, **N** - Native. **CS** - Conservation Status (National Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** - Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** - Vulnerable. **D###**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	D125	D126	D127	D128	D129	D130	D131
1	Acanthaceae	<i>Asystasia gangetica</i>	පුරුක්	N	LC	1	1	1				1
2	Acanthaceae	<i>Asystasia variabilis</i>	ගඳ පුරුක්	N	LC				1			
3	Acanthaceae	<i>Phaulopsis dorsiflora</i>		N	NT		1					
4	Achariaceae	<i>Hydnocarpus venenatus</i>	මකුල්ල	E	LC				1			
5	Amaryllidaceae	<i>Hippeastrum puniceum</i>	වල් වැණු	I	NE							1
6	Apocynaceae	<i>Alstonia macrophylla</i>	හවරි නුග	I	NE					1	1	
7	Apocynaceae	<i>Alstonia scholaris</i>	රුක් අත්තන	N	LC		1		1			
8	Apocynaceae	<i>Anodendron parviflorum</i>	දුල්, ගරඬි දුල්	N	VU				1			
9	Apocynaceae	<i>Chonemorpha fragrans</i>	බු වැල් අඟුණ	N	VU				1			
10	Apocynaceae	<i>Ichnocarpus frutescens</i>	කිරි වැල්	N	LC				1			
11	Apocynaceae	<i>Tabernaemontana dichotoma</i>	දිවි කදුරු	E	LC				1			1
12	Araceae	<i>Colocasia esculenta</i>	ගහල	N	LC			1				
13	Araceae	<i>Dieffenbachia seguine</i>		I	NE			1				
14	Araceae	<i>Pothos scandens</i>	පෝටා වැල්	N	LC				1			
15	Araliaceae	<i>Schefflera stellata</i>	ඉත්ත	N	LC				1			
16	Arecaceae	<i>Caryota urens</i>	කිතුල්	N	LC				1			
17	Arecaceae	<i>Elaeis guineensis</i>	කටු පොල්	I	NE		1					
18	Asteraceae	<i>Ageratum conyzoides</i>	හුලන්තලා	I	NE	1				1	1	1
19	Asteraceae	<i>Chromolaena odorata</i>	පොඩි සිඤ්ඤොමරන්	I	NE	1		1	1			1
20	Asteraceae	<i>Cyanthillium cinereum</i>	මොණරකුඩුමිඛිය	N	LC	1	1					
21	Asteraceae	<i>Elephantopus scaber</i>	අත් අඩි, ගොඩිවි	N	LC							1
22	Asteraceae	<i>Emilia exserta</i>	හුලන්තලා, කඩුපහර	N	LC	1						1
23	Asteraceae	<i>Mikania cordata</i>	වතු පාළු	I	NE		1			1	1	

	Family	Scientific Name	Common Name	DS	CS	D125	D126	D127	D128	D129	D130	D131
24	Asteraceae	<i>Sphagneticola trilobata</i>	උදය කුමාර්	I	NE			1				
25	Asteraceae	<i>Struchium sparganophorum</i>		I	NE			1				
26	Cleomaceae	<i>Cleome rutidosperma</i>		N	LC	1						
27	Clusiaceae	<i>Garcinia quaesita</i>	ගොරකා	E	LC				1			
28	Commelinaceae	<i>Commelina diffusa</i>	ගිරා පළා	N	LC	1						
29	Convolvulaceae	<i>Xenostegia tridentata</i>	හවර් මදු	N	LC	1						
30	Dilleniaceae	<i>Dillenia suffruticosa</i>	පර	I	NE			1				
31	Dilleniaceae	<i>Tetracera sarmentosa</i>	කොරොස වැල්	N	LC				1			
32	Euphorbiaceae	<i>Hevea brasiliensis</i>	රබර්	I	NE	1				1	1	1
33	Euphorbiaceae	<i>Macaranga peltata</i>	කැන්ද	N	LC		1	1	1			1
34	Euphorbiaceae	<i>Mallotus tetracoccus</i>	බු කැන්ද	N	LC				1			
35	Fabaceae	<i>Centrosema pubescens</i>		I	NE			1	1			1
36	Fabaceae	<i>Falcataria falcata</i>	මාර	I	NE			1				
37	Fabaceae	<i>Flemingia macrophylla</i>	වල් උදු	N	CR			1				
38	Fabaceae	<i>Gliricidia sepium</i>	වැටමාර	I	NE	1						
39	Fabaceae	<i>Grona heterocarpa</i>	ඇන් උදුපියලිය	N	VU	1	1		1	1	1	
40	Fabaceae	<i>Grona heterophylla</i>	මහ උදුපියලිය	N	LC	1	1	1				1
41	Fabaceae	<i>Grona triflora</i>	හීන් උදුපියලිය	N	LC	1		1				1
42	Fabaceae	<i>Mezoneuron hymenocarpum</i>	ගොඩ වඩුලැටිය	N	NT				1			
43	Fabaceae	<i>Mimosa pudica</i>	නිදිකුම්බා	I	NE	1	1	1				
44	Fabaceae	<i>Neustanthus phaseoloides</i>	පෝර වැල්	I	NE			1				1
45	Fabaceae	<i>Senna alata</i>	ඇන් තෝර	I	NE			1				
46	Fabaceae	<i>Senna tora</i>	පෙනි තෝර	I	NE			1				
47	Fabaceae	<i>Vigna hosei</i>		I	NE		1			1	1	
48	Lamiaceae	<i>Hyptis capitata</i>		I	NE		1	1	1			1
49	Lamiaceae	<i>Vitex altissima</i>	මිල්ල	N	NT				1			
50	Lauraceae	<i>Litsea longifolia</i>	රන් කැලිය	E	DD				1			

	Family	Scientific Name	Common Name	DS	CS	D125	D126	D127	D128	D129	D130	D131
51	Lauraceae	<i>Neolitsea cassia</i>	දවුල් කුරුඳු	N	LC				1			
52	Lecythidaceae	<i>Barringtonia racemosa</i>	දිය මිදෙල්ල	N	LC			1				
53	Linderniaceae	<i>Vandellia diffusa</i>		I	NE		1					1
54	Malvaceae	<i>Hibiscus hispidissimus</i>		N	LC				1			
55	Malvaceae	<i>Sida rhombifolia</i>	හීන් බැබිල	N	LC			1				
56	Malvaceae	<i>Sida rhombifolia</i>	කොටිකන් බැබිල	N	LC	1	1			1	1	
57	Malvaceae	<i>Urena lobata</i>	පට්ට ඇපල	N	LC	1	1	1				1
58	Malvaceae	<i>Ceiba pentandra</i>	කොට්ට පුලුන්	I	NE			1				
59	Malvaceae	<i>Triumfetta pentandra</i>	කපු කිනිස්ස	N	LC	1		1				
60	Melastomataceae	<i>Heterotis rotundifolia</i>		I	NE		1					1
61	Melastomataceae	<i>Melastoma malabathricum</i>	මහ බෝවිටියා	N	LC	1		1				
62	Melastomataceae	<i>Memecylon umbellatum</i>	කොර කහ	N	LC				1			1
63	Melastomataceae	<i>Miconia crenata</i>	කටකළු බෝවිටියා	I	NE	1	1	1	1	1	1	1
64	Menispermaceae	<i>Anamirta cocculus</i>	තින්ත වැල්	N	LC				1			
65	Moraceae	<i>Artocarpus heterophyllus</i>	කොස්	I	NE				1			
66	Moraceae	<i>Ficus exasperata</i>	බු තෙදිය	N	LC				1			
67	Moraceae	<i>Ficus hispida</i>	කොට දිඹුල	N	LC			1	1	1	1	
68	Moraceae	<i>Ficus laevis</i>		N	LC				1			
69	Moraceae	<i>Ficus tinctoria</i>	වල් ඇහැටු	N	LC							1
70	Musaceae	<i>Musa x paradisiaca</i>	කෙහෙල්	I	NE			1				
71	Myrtaceae	<i>Syzygium caryophyllatum</i>	දං, හීන් දං	N	LC			1				
72	Ochnaceae	<i>Campylospermum serratum</i>	බෝ කර	N	LC				1			
73	Orchidaceae	<i>Polystachya concreta</i>		N	LC				1			
74	Pandanaceae	<i>Pandanus ceylanicus</i>	මී කෙයියා	E	VU			1				
75	Phyllanthaceae	<i>Aporosa cardiosperma</i>	කැබැල්ල	N	LC				1			
76	Phyllanthaceae	<i>Breynia androgyna</i>	ජපන් බටු	N	LC				1	1	1	
77	Phyllanthaceae	<i>Margaritaria cyanosperma</i>	කළු නියන්	E	VU				1			

	Family	Scientific Name	Common Name	DS	CS	D125	D126	D127	D128	D129	D130	D131
78	Phyllanthaceae	<i>Phyllanthus urinaria</i>	රන් පිටවක්කා	N	LC			1				1
79	Piperaceae	<i>Piper fallax</i>	වල් ගම්මිරිස්	N	LC				1			
80	Plantaginaceae	<i>Scoparia dulcis</i>	වල් කොත්තමල්ලි	I	NE			1				
81	Poaceae	<i>Axonopus compressus</i>	පොතු නණ	I	NE	1	1	1				1
82	Poaceae	<i>Chrysopogon aciculatus</i>	තුන්තිරි, වන්ද	N	LC	1						
83	Poaceae	<i>Ochlandra stridula</i>	බට	E	LC					1	1	
84	Rhamnaceae	<i>Ziziphus oenopolia</i>	හීන් එරමිණියා	N	LC			1	1	1	1	
85	Rubiaceae	<i>Exallage auricularia</i>	ගැට කොළ	N	LC	1	1	1				1
86	Rubiaceae	<i>Mussaenda frondosa</i>	මුස්සන්ද	N	LC				1			
87	Rubiaceae	<i>Ophiorrhiza mungos</i>	දන් කැටිය	N	LC							1
88	Rubiaceae	<i>Spermacoce latifolia</i>		I	NE	1						1
89	Rubiaceae	<i>Spermacoce ocyimifolia</i>		I	NE		1			1	1	1
90	Rubiaceae	<i>Uncaria elliptica</i>		N	LC					1	1	
91	Rutaceae	<i>Paramignya monophylla</i>	වෙල්ලංගිරිය	N	LC				1			
92	Rutaceae	<i>Toddalia asiatica</i>	කුඩුමිරිස්ස	N	LC				1			
93	Sapindaceae	<i>Allophylus cobbe</i>	කොබ්බෑ	N	LC				1			
94	Sapindaceae	<i>Nephelium lappaceum</i>	රඹුටන්	I	NE							1
95	Symplocaceae	<i>Symplocos acuminata</i>	බෝඹු	N	LC		1	1	1	1	1	1
96	Urticaceae	<i>Pilea microphylla</i>	පරිප්පු ගස්	I	NE		1					
97	Verbenaceae	<i>Lantana camara</i>	ගදපාන	I	NE		1	1				1
98	Verbenaceae	<i>Stachytarpheta cayennensis</i>		I	NE	1	1	1				
99	Verbenaceae	<i>Stachytarpheta jamaicensis</i>	බලනකුට	I	NE			1				1
100	Zingiberaceae	<i>Hedychium coronarium</i>	එළ මල්	I	NE			1				
101	Zingiberaceae	<i>Meistera fulviceps</i>	නිය	N	VU				1			

Annex 2b. The list of animal species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **N** - Native, **I** – Introduced, **M** - Migrant. **CS** - Conservation Status (National Conservation Status or * Global Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** – Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** – Vulnerable. **D###**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	D125	D126	D127	D128	D129	D130	D131
Dragonflies												
1	Calopterygidae	<i>Vestails nigrescens</i>	Black-tipped flashwing	N	LC*			1				1
2	Chlorocyphidae	<i>Libellago greeni</i>	Green's Gem	E	LC*			1				1
3	Euphaeidae	<i>Euphaea splendens</i>	Shining Gossamerwing	E	LC*							1
4	Coenagrionidae	<i>Pseudagrion rubriceps</i>	Orange-faced Sprite	N	LC*			1				
5	Platycnemididae	<i>Copera marginipes</i>	Yellow Featherleg	N	LC		1					1
6	Macromiidae	<i>Macromia zeylanica</i>	Sri Lanka Cruiser	E	VU*			1				
7	Libellulidae	<i>Neurothemis tullia</i>	Pied Parasol	N	LC					1		
8	Libellulidae	<i>Trithemis festiva</i>	Indigo Dropwing	N	VU			1				1
9	Libellulidae	<i>Pantala flavescens</i>	Wandering Glider	N	LC	1						
Butterflies												
1	Papilionidae	<i>Troides darsius</i>	Sri Lankan Birdwing	E	LC				1			
2	Papilionidae	<i>Pachliopta aristolochiae</i>	Common Rose	N	LC				1			
3	Papilionidae	<i>Papilio polymnestor</i>	Blue Mormon	N	LC				1			
4	Pieridae	<i>Leptosia nina</i>	Psyche	N	LC	1	1				1	1
5	Pieridae	<i>Delias eucharis</i>	Jezebel	N	LC			1			1	
6	Pieridae	<i>Catopsilia pomona</i>	Lemon Emigrant	N	LC			1				
7	Pieridae	<i>Eurema hecabe</i>	Common Grass Yellow	N	LC						1	
8	Nymphalidae	<i>Euploea core</i>	Common Crow	N	LC				1			
9	Nymphalidae	<i>Hypolimnias misippus</i>	Danaid Eggfly	N	LC				1			
10	Nymphalidae	<i>Neptis hylas</i>	Common Sailor	N	LC				1	1		
11	Nymphalidae	<i>Ypthima ceylonica</i>	White Four-ring	N	LC	1	1			1	3	1

	Family	Scientific Name	Common Name	DS	CS	D125	D126	D127	D128	D129	D130	D131
12	Nymphalidae	<i>Elymnias hypermnestra</i>	Common Palmfly	N	LC		1					
13	Lycaenidae	<i>Nacaduba hermus</i>	Pale Four Lineblue	N	NT				1			
14	Lycaenidae	<i>Everes lacturnus</i>	Indian Cupid	N	LC		1	1		1		
15	Lycaenidae	<i>Jamides bochus</i>	Dark Cerulean	N	LC				1	1		1
16	Lycaenidae	<i>Jamides celeno</i>	Common Cerulean	N	LC	1		1	1	1	1	1
17	Lycaenidae	<i>Catochrysops panormus</i>	Silver Forget-me-not	N	CR			1				
18	Lycaenidae	<i>Caleta decidia</i>	Angled Pierrot	N	LC							1
19	Lycaenidae	<i>Zizina otis</i>	Lesser Grass Blue	N	LC	1	1					
20	Lycaenidae	<i>Chilades lajus</i>	Lime Blue	N	LC		1					
21	Hesperiidae	<i>Ampittia dioscorides</i>	Bush Hopper	N	LC					1		
22	Hesperiidae	<i>Iambrix salsala</i>	Chestnut Bob	N	LC			1		1		1
23	Hesperiidae	<i>Potanthus satra</i>	Sri Lankan Dart/Tropic dart	E	LC				1			
24	Hesperiidae	<i>Pelopidas conjuncta</i>	Conjoined Swift	N	VU					1		
Freshwater Fish												
1	Cyprinidae	<i>Dawkinsia filamentosa</i>	Sri Lanka Filamented Barb	N	LC			1				1
2	Cyprinidae	<i>Garra ceylonensis</i>	Sri Lanka Stone Sucker	E	NT							1
3	Cyprinidae	<i>Pethia nigrofasciata</i>	Sri Lanka Black Ruby Barb	E	VU			1				
4	Cyprinidae	<i>Puntius bimaculatus</i>	Redside Barb	N	LC			1				1
5	Cyprinidae	<i>Pethia reval</i>	Redfin Two-banded carplet	E	EN			1				
6	Cyprinidae	<i>Puntius kelumi</i>	Sri Lanka Redeye Barb	E	EN			1				1
7	Cyprinidae	<i>Puntius titteya</i>	Sri Lanka Cherry Barb	E	VU			1				
8	Cyprinidae	<i>Systemus sarana</i>	Olive Barb	N	NE			1				1
9	Cyprinidae	<i>Oreochromis sp.</i>	Tilapia	I	NE							1
10	Danionidae	<i>Devario malabaricus</i>	Giant Danio	N	LC			1				1
11	Danionidae	<i>Rasbora dandia</i>	Broad line Striped Rasbora	N	LC			1				1
12	Nemacheilidae	<i>Paracanthocobitis urophthalma</i>	Sri Lanka Tiger Loach	E	EN			1				

	Family	Scientific Name	Common Name	DS	CS	D125	D126	D127	D128	D129	D130	D131
13	Cobitidae	<i>Lepidocephalichthys thermalis</i>	Common Spiny Loach	N	LC			1				1
14	Bagridae	<i>Mystus ankutta</i>	Sri Lanka Dwarf Catfish	E	EN							1
15	Channidae	<i>Channa kelaartii</i>	Brown Snakehead	N	NT			1				
16	Channidae	<i>Channa orientalis</i>	Smooth-Breasted Snakehead	E	VU		1					
17	Claridae	<i>Clarias brachysoma</i>	Walking catfish	E	NT							1
18	Belontiidae	<i>Belontia signata</i>	Sri Lanka Combtail	E	VU			1				1
Amphibians												
1	Bufo	<i>Duttaphrynus melanostictus</i>	Common toad	N	LC		1					
Reptiles												
1	Agamidae	<i>Calotes calotes</i>	Green forest Lizard	N	LC			1		1		
2	Agamidae	<i>Calotes liolepis</i>	Whistling Lizard	E	LC*	1						
3	Agamidae	<i>Otocryptis wiegmanni</i>	Sri Lankan Kangaroo Lizard	E	LC*				1			
4	Gekkonidae	<i>Cnemaspis melligodai</i>	Melligoda' Daygecko	E	EN*				1			
5	Scincidae	<i>Lankascincus dorsicatenatus</i>	Catenated lanka skink	E	LC*				1			
6	Viperidae	<i>Hypnale hypnale</i>	Merrem's Hump-nosed Pit Viper	N	LC*	1						
Birds												
1	Phasianidae	<i>Pavo cristatus</i>	Indian Peafowl	N	LC	1					1	
2	Accipitridae	<i>Spilornis cheela</i>	Crested Serpent-eagle	N	LC				1			1
3	Columbidae	<i>Stigmatopelia chinensis</i>	Spotted Dove	N	LC	1	1	1			1	
4	Psittacidae	<i>Loriculus beryllinus</i>	Sri Lanka Hanging Parrot	E	LC		1	1	1	1	1	
5	Cuculidae	<i>Centropus sinensis</i>	Greater Coucal	N	LC	1	1				1	
6	Cuculidae	<i>Cacomantis sonneratii</i>	Banded Bay Cuckoo	N	NT				1			
7	Apodidae	<i>Cypsiurus balasiensis</i>	Asian Palm-swift	N	LC	1					1	
8	Hemiprocnidae	<i>Hemiprocne coronata</i>	Crested Treeswift	N	LC						1	
9	Alcedinidae	<i>Halcyon smyrnensis</i>	White-throated Kingfisher	N	LC		1					
10	Meropidae	<i>Merops leschenaulti</i>	Chestnut-headed Bee-eater	N	LC	1	1			1		1

	Family	Scientific Name	Common Name	DS	CS	D125	D126	D127	D128	D129	D130	D131
11	Meropidae	<i>Merops philippinus</i>	Blue-tailed Bee-eater	M	LC*						1	
12	Ramphastidae	<i>Megalaima zeylanica</i>	Brown-headed Barbet	N	LC					1		
13	Ramphastidae	<i>Megalaima rubricapillus</i>	Sri Lanka Barbet	E	LC					1		
14	Ramphastidae	<i>Megalaima flavifrons</i>	Sri Lanka Yellow-fronted Barbet	E	LC	1	1		1	1	1	1
15	Picidae	<i>Dinopium psarodes</i>	Lesser Sri Lanka Flameback	E	LC				1			
16	Aegithinidae	<i>Aegithina tiphia</i>	Common Iora	N	LC				1			
17	Campephagidae	<i>Pericrocotus flammeus</i>	Scarlet Minivet	N	LC	1						
18	Campephagidae	<i>Hemipus picatus</i>	Bar-winged Flycatcher-shrike	N	LC						1	
19	Campephagidae	<i>Tephrodornis pondicerianus</i>	Sri Lanka Wood-shrike	E	LC		1					
20	Laniidae	<i>Lanius cristatus</i>	Brown Shrike	M	LC*			1				
21	Oriolidae	<i>Oriolus xanthornus</i>	Black-hooded Oriole	N	LC					1		
22	Dicruridae	<i>Dicrurus caerulescens</i>	White-bellied Drongo	N	LC						1	
23	Rhipiduridae	<i>Rhipidura aureola</i>	White-browed Fantail	N	LC		1	1	1	1		
24	Hirundinidae	<i>Hirundo hypertyra</i>	Sri Lanka swallow	E	LC	1					1	
25	Hirundinidae	<i>Hirundo rustica</i>	Barn Swallow	M	LC*		1					
26	Cisticolidae	<i>Prinia inornata</i>	Plain Prinia	N	LC	1						
27	Pycnonotidae	<i>Hypsipetes leucocephalus</i>	Asian Black Bulbul	N	LC	1	1		1		1	1
28	Pycnonotidae	<i>Pycnonotus melanicterus</i>	Black-crested Bulbul	E	LC				1			
29	Pycnonotidae	<i>Pycnonotus cafer</i>	Red-vented Bulbul	N	LC	1	1	1			1	
30	Pycnonotidae	<i>Iole indica</i>	Yellow-browed Bulbul	N	LC	1			1	1		1
31	Sylviidae	<i>Orthotomus sutorius</i>	Common Tailorbird	N	LC		1	1		1		
32	Sylviidae	<i>Phylloscopus magnirostris</i>	Large-billed Leaf-warbler	M	LC*				1			
33	Sylviidae	<i>Phylloscopus trochiloides</i>	Greenish Warbler	M	LC*				1	1		
34	Zosteropidae	<i>Zosterops palpebrosus</i>	Oriental White Eye	N	LC		1		1	1		
35	Sittidae	<i>Sitta frontalis</i>	Velvet Fronted Nuthatch	N	LC				1			
36	Sturnidae	<i>Acridotheres tristis</i>	Common Myna	N	LC		1	1				
37	Sturnidae	<i>Gracula religiosa</i>	Hill Myna	N	LC						1	

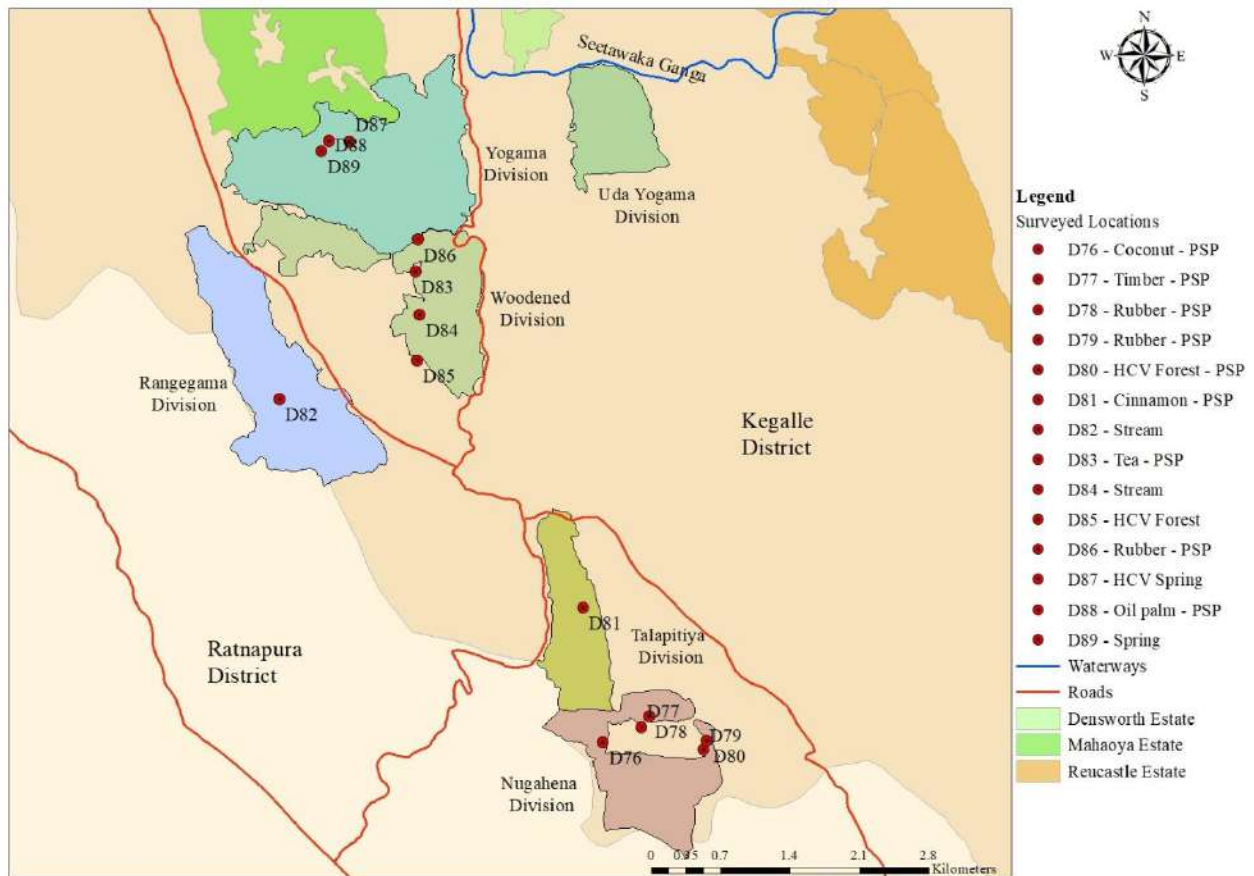
	Family	Scientific Name	Common Name	DS	CS	D125	D126	D127	D128	D129	D130	D131
38	Muscicapidae	<i>Cyornis tickelliae</i>	Tickell's Blue Flycatcher	N	LC					1		
39	Chloropseidae	<i>Chloropsis aurifrons</i>	Golden Fronted Leafbird	N	LC						1	
40	Dicaeidae	<i>Dicaeum erythrorhynchos</i>	Pale-billed Flowerpecker	N	LC				1	1	1	
41	Nectariniidae	<i>Nectarinia zeylonica</i>	Purple-rumped Sunbird	N	LC			1		1		
Mammals												
1	Megadermatidae	<i>Megaderma spasma</i>	Lesser False Vampire bat	N	VU			1				
2	Cercopithecidae	<i>Semnopithecus vetulus</i>	Sri Lanka Purple-faced langur	E	EN	1		1	1	1	1	
3	Suidae	<i>Sus scrofa</i>	Wild boar	N	LC				1			1
4	Hystricidae	<i>Hystrix indica</i>	Porcupine	N	LC	1	1		1			
5	Sciuridae	<i>Ratufa macroura</i>	Giant squirrel	N	LC				1			
6	Mustelidae	<i>Lutra lutra</i>	Otter	N	VU							1

Woodend Estate

1. Introduction

Woodend Estate is managed under the Mahaoya Group of Lalan Rubbers Pvt. Ltd. It is located in the Kegalle District and has a total extent of 967.57 ha. There are six divisions in the estate and the primary crops grown is rubber while some extents of oil palm, coconut, tea, cinnamon and timber blocks are also present. The extent of conservation areas in the estate is 29.18 ha. There is a HCV forest in the Nugehena Division and several HCV sites important for the provision of freshwater and biodiversity conservation are also present in the estate.

Woodend estate is located in the wet climatic zone of the country. Ecologically the area is near the conjunction of three floristic zones, i.e., Northern Wet Lowland Floristic Zone, Sinharaja and Rathnapura Floristic Zone and Foothills of Adam’s Peak and Ambagamuwa Floristic Zone. The estate is located in the Kelani River basin and Seethawaka Ganga, a tributary of Kelani River flows along the northern boundary of the estate.



Map of Woodend Estate and the distribution of sampling sites (Table XX).

2. Methodological approach

2.1 Study locations: Altogether, 14 sampling sites were surveyed, 5 in Nugahena Division, 4 in Yogama Division, 3 in Woodend Division and 1 site each in Thalapitiya and Rangegama Divisions. These includes one HCV Forest site, PSPs in Rubber, Oil Palm, Coconut, Tea, Cinnamon and Alstonia, a HCV site, and a several springs and streams. A summary of locations sampled are given in Table 1 and the distribution of the sampling plots within the Woodend estate is shown in Figure 1.

Table 1. The number of sites sampled within the Woodend Estate

Division	Site	Site type	Site code	Latitude	Longitude	Ele. (m)
Nugahena	Coconut	Coconut - PSP	D76	6.86428	80.28613	193
	Alstonia	Timber - PSP	D77	6.86566	80.28960	259
	Rubber 2012	Rubber - PSP	D78	6.86662	80.29028	264
	Rubber	Rubber - PSP	D79	6.86362	80.29523	249
	HCV Forest	Forest - PSP	D80	6.86441	80.29555	228
Thalapitiya	Cinnamon 1982	Cinnamon - PSP	D81	6.87647	80.28432	139
Rangegama	2013/2006/2005	Stream	D82	6.89539	80.25675	126
Woodend	Tea T1 B block	Tea - PSP	D83	6.90700	80.26907	54
	Rubber 2008	Stream	D84	6.90307	80.26949	53
	Weli Muwa HCV	Forest	D85	6.89891	80.26923	166
Yogama	Rubber 2004	Rubber - PSP	D86	6.90988	80.26932	48
	HCV 2008	Spring	D87	6.91878	80.26308	168
	Op 2016	Oil palm - PSP	D88	6.91882	80.26125	181
	Op 2016	Spring	D89	6.91792	80.26056	187

2.2 Study Period: This study was undertaken in January 2022 covering the dry season of the area and the bird migratory season.

2.3 Study techniques: Please refer Chapter 1

3. Key Findings of the Biodiversity Assessment

Based on the results of the assessments conducted in the Woodend estate 134 species of plants and 162 species of animals were recorded. This included 50 species of endemic fauna,

14 species of endemic flora, 24 species of threatened fauna and 13 species of threatened flora. A summary of the species recorded under different taxonomic groups are presented in table 2. The detailed list of plants and animals observed during this study including their distribution and threat status is given in Annex 2a and 2b.

Table 2. Summary of the total fauna and flora recorded during the assessment.

Abbreviations used: **CR** - Critically Endangered; **EN** - Endangered; **VU** – Vulnerable, **NT** - Near Threatened, **DD** – Data Deficient.

Taxa	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Dragonflies	28	13	-	-	1	8	9	-
Butterflies	37	3	-	2	-	1	2	-
Freshwater Fish	21	10	-	-	3	4	3	-
Amphibians	5	4	-	-	-	2	2	-
Reptiles	15	8	-	-	-	2	1	-
Birds	46	10	-	-	-	-	3	-
Mammals	10	2	-	-	-	1	2	-
Sub-Total (Fauna)	162	50	0	2	4	18	22	0
Plants	134	14	45	1	3	9	4	2
Total (Species)	296	64	45	3	7	27	26	2

4. Important Findings of the Assessment

4.1. Critical Species

1. Sri Lanka Paintbrush Swift (*Baoris penicillata*)

This is an endemic and a Critically Endangered butterfly species confined to the wet zone of Sri Lanka. It inhabits forested areas below 1,400 m and in considerable stands of the bamboo *Ochlandra stridula*. One individual was recorded at the “Weli Muwa” HCV site (Site D85) in the Woodend Division.



Sri Lanka Paintbrush Swift. Woodend Division. Image: AS

2. *Desmos elegans* (කුඩුමිරිස්ස)

A finely branched treelet grows up to about 2-4 m in height. Locally frequent at edges and in clearings of lowland Dipterocarp forests, especially along streams, at low elevations (up to about 300 m). This endemic and Endangered species was observed at the HCV forest in Nugahena Division (Site D80).



Desmos elegans. Nugahena Division. Image: NC

3. *Lagenandra thwaitesii* (කෙටෙල)

This species usually grows among rocks in the banks of small streams. The silver color margins in the leaves are the main character for identification. It is recorded mainly in south western lowlands and in Woodend estate it was observed in the stream near the Rubber 2004 field in Yogama Division (Site D86).



Lagenandra thwaitesii. Yogama Division. Image: NC

4.2. Critical Habitats

1. HCV Forest in Nugahena Division

This HCV forest represents a lowland rain forest habitat where several endemic, rare and threatened species have been recorded. Some of the important species reported in the area include the Red Slender Loris, endemic plant *Desmos elegans*, Leaf-rolling Shrub Frog and Green Pit Viper.

2. Stream near 2004 Rubber field in Yogama Division

This medium sized, slow flowing stream has a dense aquatic vegetation along its banks. Multiple species of rare and threatened fish including Sri Lanka Tiger Loach, Black Ruby Barb, Combtail, and dragonflies Lieftinck's Sprite, Sri Lanka Cruiser, Sri Lanka Sabretail, Wijaya's Scissortail and Transvesite Clubtail. Were reported in this habitat.



HCV forest in Nugahena Division (Site D80)

5. Conclusions and Recommendations

Results of the present assessment indicates that the total species richness and the number of endemic and threatened species recorded remains equal or higher in most instances compared to previous survey done in 2016. It should be noted that some of the species recorded during the previous assessments have not been recorded during the present survey and number of new species including endemic and threatened species have been newly recorded during the present assessment. Therefore, based on this data it can be safely concluded that the species richness as well as number of critical species (endemic and threatened species) have not undergone a decline between the two assessments.

Based on the findings of this assessment and the field observations the following set of recommendations can be made.

1. Weli Muwa HCV site (Site D85) in the Woodend Division of the estate represents a secondary forest patch that could be managed as a conservation area. The Critically Endangered butterfly Sri Lanka Paintbrush Swift was observed in this site.
2. Medium to large streams in the lowland areas such as the stream near 2004 Rubber field in Yogama division should be given an increased attention as they provide an important habitat for the aquatic biodiversity in the landscape.
3. Please refer the list of recommendations in the main report for additional recommendations.

	Family	Scientific Name	Common Name	DS	CS	D76	D77	D78	D79	D80	D81	D82	D83	D84	D85	D86	D87	D88	D89
19	Arecaceae	<i>Areca triandra</i>		I	NE		1			1									
20	Arecaceae	<i>Calamus thwaitesii</i>	මා වේ වැල්	N	VU					1									
21	Arecaceae	<i>Caryota urens</i>	කිතුල්	N	LC		1		1		1			1	1	1	1		
22	Aristolochiaceae	<i>Thottea siliquosa</i>	නාපසර බුලත්	N	LC					1									
23	Asparagaceae	<i>Dracaena thwaitesii</i>	වෙඩිකොකා ගස්	N	LC					1									
24	Asteraceae	<i>Ageratum conyzoides</i>	හුලන්තලා	I	NE						1	1	1						1
25	Asteraceae	<i>Chromolaena odorata</i>	පොඩි සිඤ්ඤාමරන්	I	NE				1									1	1
26	Asteraceae	<i>Crassocephalum crepidioides</i>		I	NE	1			1		1		1						
27	Asteraceae	<i>Cyanthillium cinereum</i>	මොණරකුඩුමිනි ය	N	LC	1					1								1
28	Asteraceae	<i>Emilia sonchifolia</i>	කඩුපහර	N	LC						1								1
29	Asteraceae	<i>Erigeron bonariensis</i>	සුදුන	I	NE								1						
30	Asteraceae	<i>Mikania cordata</i>	වතු පාළු	I	NE	1			1		1	1						1	
31	Asteraceae	<i>Sphagneticola trilobata</i>	උදය කුමාර්	I	NE											1	1		
32	Balsaminaceae	<i>Impatiens flaccida</i>	කුඩුළු	N	NT				1										
33	Begoniaceae	<i>Begonia cordifolia</i>	ගල් ඇඹල	N	VU													1	
34	Cannabaceae	<i>Trema orientale</i>	ගැඹුඹ	N	LC	1												1	1
35	Cleomaceae	<i>Cleome rutidosperma</i>		N	LC								1						
36	Combretaceae	<i>Terminalia arjuna</i>	කුඹුක්	N	LC														1
37	Convolvulaceae	<i>Argyreia thwaitesii</i>	මා බඳ, ගිරිනිල්ල	E	LC		1												
38	Convolvulaceae	<i>Camonea pilosa</i>	කිරි මදු, මහ මදු	N	LC	1						1							1
39	Convolvulaceae	<i>Xenostegia tridentata</i>	හවර මදු, හීන් මදු	N	LC						1								
40	Costaceae	<i>Costus afer</i>		I	NE	1		1						1		1			
41	Costaceae	<i>Hellenia speciosa</i>	තොඹු	N	LC				1		1	1						1	

	Family	Scientific Name	Common Name	DS	CS	D76	D77	D78	D79	D80	D81	D82	D83	D84	D85	D86	D87	D88	D89
110	Plantaginaceae	<i>Scoparia dulcis</i>	වල් කොත්තමල්ලි	I	NE								1						
111	Poaceae	<i>Bambusa multiplex</i>	චීන උණ, කුරු උණ	I	NE														1
112	Poaceae	<i>Bambusa vulgaris</i>	කහ උණ	I	NE									1					
113	Poaceae	<i>Ochlandra stridula</i>	බට	E	LC		1		1	1					1	1			
114	Poaceae	<i>Urochloa maxima</i>	ගිණි තණ	I	NE	1					1								
115	Polygalaceae	<i>Xanthophyllum zeylanicum</i>	පලල	E	LC				1	1									
116	Rhamnaceae	<i>Ziziphus oenopolia</i>	හීන් එරමිණියා	N	LC		1								1				
117	Rhamnaceae	<i>Ziziphus rugosa</i>	මහ එරමිණියා	N	NT					1					1				
118	Rubiaceae	<i>Coffea arabica</i>	කෝපි	I	NE	1				1									
119	Rubiaceae	<i>Gaertnera vaginans</i>	පේර තඹල	E	LC		1								1				
120	Rubiaceae	<i>Mussaenda frondosa</i>	මුස්සන්ද	N	LC		1	1										1	
121	Rubiaceae	<i>Ophiorrhiza mungos</i>	දත් කැටිය	N	LC									1				1	
122	Rubiaceae	<i>Spermacoce latifolia</i>		I	NE	1			1		1		1						
123	Rubiaceae	<i>Spermacoce ocyimifolia</i>		I	NE	1			1		1		1						
124	Rubiaceae	<i>Tarenna asiatica</i>	තරණ	N	LC													1	
125	Rubiaceae	<i>Uncaria elliptica</i>		N	LC					1									
126	Rutaceae	<i>Melicope lunu-ankenda</i>	ලුණු අත්කෝන්ද	N	LC													1	
127	Rutaceae	<i>Toddalia asiatica</i>	කුඩු මිරිස්ස	N	LC		1	1											
128	Sapindaceae	<i>Cardiospermum microcarpum</i>	පෙනෙල වැල්	N	NT						1		1						
129	Smilacaceae	<i>Smilax perfoliata</i>	මහ කබරස	N	LC		1												
130	Smilacaceae	<i>Smilax zeylanica</i>	හීන් කබරස	N	NT										1				
131	Symplocaceae	<i>Symplocos acuminata</i>	බෝඹු	N	LC	1	1	1	1		1			1	1	1	1	1	1

	Family	Scientific Name	Common Name	DS	CS	D76	D77	D78	D79	D80	D81	D82	D83	D84	D85	D86	D87	D88	D89
132	Verbenaceae	<i>Lantana camara</i>	ගඳපාන	I	NE	1						1							1
133	Verbenaceae	<i>Stachytarpheta cayennensis</i>		I	NE						1		1						
134	Verbenaceae	<i>Stachytarpheta jamaicensis</i>	බිලුනකුට	I	NE	1		1				1	1						

Annex 2b. The list of animal species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **N** - Native, **I** - Introduced, **M** - Migrant. **CS** - Conservation Status (National Conservation Status or * Global Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** - Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** - Vulnerable. **D##**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	D76	D77	D78	D79	D80	D81	D82	D83	D84	D85	D86	D87	D88	D89
Dragonflies																			
1	Calopterygidae	<i>Neurobasis chinensis</i>	Oriental green-wing	N	VU											1			
2	Calopterygidae	<i>Vestails nigrescens</i>	Black-tipped flashwing	N	LC*									1		1			1
3	Chlorocyphidae	<i>Libellago greeni</i>	Green's Gem	E	LC*							1				1			
4	Euphaeidae	<i>Euphaea splendens</i>	Shining Gossamerwing	E	LC*							1					1		
5	Coenagrionidae	<i>Archibasis lieftincki</i>	Lieftinck's Sprite	E	EN*											1			
6	Platycnemididae	<i>Elattoneura caesia</i>	Jungle Threadtail	E	NT*												1		
7	Platycnemididae	<i>Elattoneura centralis</i>	Dark-glittering Threadtail	E	LC*							1		1		1			

	Family	Scientific Name	Common Name	DS	CS	D76	D77	D78	D79	D80	D81	D82	D83	D84	D85	D86	D87	D88	D89
8	Platystictidae	<i>Ceylonosticta brincki</i>	Brinck's Shadowdamsel	E	LC*					1				1		1	1		
9	Platystictidae	<i>Ceylonosticta bine</i>	Bine's Shadowdamsel	E	VU*												1		
10	Gomphidae	<i>Cyclogomphus gynostylus</i>	Transvestite Clubtail	E	VU*											1			
11	Gomphidae	<i>Megalogomphus ceylonicus</i>	Sri Lanka Sabretail	E	VU*											1			
12	Gomphidae	<i>Paragomphus henryi</i>	Brook Hooktail	E	NT*							1							
13	Gomphidae	<i>Heliogomphus walli</i>	Wall's Grappletail	E	NT*									1					
14	Gomphidae	<i>Microgomphus wijaya</i>	Wijaya's Scissortail	E	VU*											1			
15	Aeshnidae	<i>Gynacantha dravida</i>	Indian Duskhawker	N	NT					1									
16	Macromiidae	<i>Macromia zeylanica</i>	Sri Lanka Cruiser	E	VU*											1			
17	Libellulidae	<i>Orthetrum chrysis</i>	Spine-tufted Skimmer	N	VU												1		
18	Libellulidae	<i>Orthetrum glaucum</i>	Asian Skimmer	N	NT						1	1						1	
19	Libellulidae	<i>Orthetrum luzonicum</i>	Marsh Skimmer	N	NT						1	1	1						
20	Libellulidae	<i>Orthetrum pruinosum</i>	Pink Skimmer	N	NT							1	1						
21	Libellulidae	<i>Orthetrum sabina</i>	Green Skimmer	N	LC							1	1	1					1
22	Libellulidae	<i>Bradinopyga geminata</i>	Indian Rockdweller	N	LC						1								
23	Libellulidae	<i>Neurothemis intermedia</i>	Paddyfield Parasol	N	NT		1												
24	Libellulidae	<i>Neurothemis tullia</i>	Pied Parasol	N	LC							1							
25	Libellulidae	<i>Trithemis festiva</i>	Indigo Dropwing	N	VU							1							
26	Libellulidae	<i>Rhyothemis variegata</i>	Variegated Flutterer	N	LC						1			1					
27	Libellulidae	<i>Hydrobasileus croceus</i>	Amber-winged Glider	N	NT										1				

	Family	Scientific Name	Common Name	DS	CS	D76	D77	D78	D79	D80	D81	D82	D83	D84	D85	D86	D87	D88	D89
28	Libellulidae	<i>Pantala flavescens</i>	Wandering Glider	N	LC				1		1	1							
Butterflies																			
1	Papilionidae	<i>Papilio polytes</i>	Common Mormon	N	LC								1						
2	Papilionidae	<i>Papilio polymnestor</i>	Blue Mormon	N	LC									1	1	1	1		
3	Papilionidae	<i>Papilio clytia</i>	Mime	N	LC	1													
4	Papilionidae	<i>Graphium tereidon</i>	Narrow-banded Bluebottle	N	LC					1									
5	Papilionidae	<i>Graphium agamemnon</i>	Tailed Jay	N	LC													1	
6	Pieridae	<i>Leptosia nina</i>	Psyche	N	LC					1		1	1						
7	Pieridae	<i>Appias galene</i>	Sri Lankan Lesser Albatross	E	LC						1				1				
8	Pieridae	<i>Catopsilia pomona</i>	Lemon Emigrant	N	LC						1	1							
9	Pieridae	<i>Eurema hecabe</i>	Common Grass Yellow	N	LC						1					1			
10	Nymphalidae	<i>Parantica aglea</i>	Glassy Tiger	N	LC			1											
11	Nymphalidae	<i>Euploea core</i>	Common Crow	N	LC														1
12	Nymphalidae	<i>Junonia atlites</i>	Grey Pansy	N	LC						1	1				1		1	1
13	Nymphalidae	<i>Junonia iphita</i>	Chocolate Soldier	N	LC						1					1			
14	Nymphalidae	<i>Neptis hylas</i>	Common Sailor	N	LC	1				1	1				1			1	
15	Nymphalidae	<i>Parthenos sylvia</i>	Clipper	N	LC					1									
16	Nymphalidae	<i>Melanitis leda</i>	Common Evening Brown	N	LC		1								1			1	
17	Nymphalidae	<i>Orsotriaena medus</i>	Medus Brown	N	LC	1				1	1								1
18	Nymphalidae	<i>Mycalesis perseus</i>	Common Bushbrown	N	LC	1	1												1
19	Nymphalidae	<i>Mycalesis patnia</i>	Sri Lanka Gladeye Bushbrown	E	LC													1	
20	Nymphalidae	<i>Ypthima ceylonica</i>	White Four-ring	N	LC				1	1	1	1	1		1	1		1	1
21	Nymphalidae	<i>Elymnias hypermnestra</i>	Common Palmfly	N	LC		1					1	1			1		1	

	Family	Scientific Name	Common Name	DS	CS	D76	D77	D78	D79	D80	D81	D82	D83	D84	D85	D86	D87	D88	D89
22	Lycaenidae	<i>Loxura atymnus</i>	Yamfly	N	LC										1				
23	Lycaenidae	<i>Jamides bochus</i>	Dark Cerulean	N	LC							1							
24	Lycaenidae	<i>Jamides celeno</i>	Common Cerulean	N	LC	1					1								
25	Lycaenidae	<i>Catochrysops panormus</i>	Silver Forget-me-not	N	CR							1							
26	Lycaenidae	<i>Castalius rosimon</i>	Common Pierrot	N	LC						1	1							1
27	Lycaenidae	<i>Discolampa ethion</i>	Banded Blue Pierrot	N	LC						1								
28	Lycaenidae	<i>Caleta decidia</i>	Angled Pierrot	N	LC		1												
29	Lycaenidae	<i>Neopithecops zalmora</i>	Quaker	N	LC								1						
30	Hesperiidae	<i>Caprona ransonnettii</i>	Golden Angle	N	LC						1								
31	Hesperiidae	<i>Spialia galba</i>	Grizzled Skipper	N	LC						1		1						
32	Hesperiidae	<i>Iambrix salsala</i>	Chestnut Bob	N	LC			1			1		1			1			
33	Hesperiidae	<i>Matapa aria</i>	Common Red Eye	N	VU														1
34	Hesperiidae	<i>Taractrocer a maevius</i>	Common Grass Dart	N	LC							1							
35	Hesperiidae	<i>Parnara bada</i>	Smallest Swift	N	NT		1												1
36	Hesperiidae	<i>Pelopidas agna</i>	Little Branded Swift	N	NT	1	1	1				1	1				1	1	1
37	Hesperiidae	<i>Baoris penicillata</i>	Sri Lankan Paint Brush Swift	E	CR										1				
Freshwater Fish																			
1	Cyprinidae	<i>Dawkinsia filamentosa</i>	Sri Lanka Filamented Barb	N	LC								1			1			
2	Cyprinidae	<i>Garra ceylonensis</i>	Sri Lanka Stone Sucker	E	NT				1			1				1			
3	Cyprinidae	<i>Pethia nigrofasciata</i>	Sri Lanka Black Ruby Barb	E	VU								1			1			
4	Cyprinidae	<i>Puntius bimaculatus</i>	Redside Barb	N	LC								1	1		1			
5	Cyprinidae	<i>Puntius dorsalis</i>	Long-Snouted Barb	N	LC								1			1			
6	Cyprinidae	<i>Puntius kelumi</i>	Sri Lanka Redeye Barb	E	EN								1						

	Family	Scientific Name	Common Name	DS	CS	D76	D77	D78	D79	D80	D81	D82	D83	D84	D85	D86	D87	D88	D89
25	Oriolidae	<i>Oriolus xanthornus</i>	Black-hooded Oriole	N	LC		1	1					1					1	
26	Dicruridae	<i>Dicrurus caerulescens</i>	White-bellied Drongo	N	LC		1										1		
27	Corvidae	<i>Corvus levaillantii</i>	Jungle Crow	N	LC			1		1									
28	Hirundinidae	<i>Hirundo hyperythra</i>	Sri Lanka swallow	E	LC				1										
29	Cisticolidae	<i>Prinia inornata</i>	Plain Prinia	N	LC											1			
30	Pycnonotidae	<i>Hypsipetes leucocephalus</i>	Asian Black Bulbul	N	LC				1	1									
31	Pycnonotidae	<i>Pycnonotus melanicterus</i>	Black-crested Bulbul	E	LC					1					1				
32	Pycnonotidae	<i>Pycnonotus cafer</i>	Red-vented Bulbul	N	LC	1	1	1	1		1		1					1	1
33	Pycnonotidae	<i>Pycnonotus luteolus</i>	White-browed Bulbul	N	LC		1			1	1		1					1	
34	Pycnonotidae	<i>Iole indica</i>	Yellow-browed Bulbul	N	LC					1	1								
35	Sylviidae	<i>Orthotomus sutorius</i>	Common Tailorbird	N	LC	1	1		1				1			1			
36	Timaliidae	<i>Turdoides affinis</i>	Yellow-billed Babbler	N	LC					1						1		1	1
37	Timaliidae	<i>Pomatorhinus melanurus</i>	Sri Lanka Scimitar Babbler	E	LC										1				
38	Zosteropidae	<i>Zosterops palpebrosus</i>	Oriental White Eye	N	LC					1			1		1				
39	Sturnidae	<i>Acridotheres tristis</i>	Common Myna	N	LC	1			1	1	1		1			1			
40	Sturnidae	<i>Gracula religiosa</i>	Hill Myna	N	LC			1											
41	Muscicapidae	<i>Saxicoloides fulicatus</i>	Indian Robin	N	LC										1				
42	Muscicapidae	<i>Copsychus saularis</i>	Oriental Magpie Robin	N	LC													1	
43	Muscicapidae	<i>Cyornis tickelliae</i>	Tickell's Blue Flycatcher	N	LC				1	1							1		
44	Dicaeidae	<i>Dicaeum erythrorhynchos</i>	Pale-billed Flowerpecker	N	LC		1						1						
45	Nectariniidae	<i>Nectarinia zeylonica</i>	Purple-rumped Sunbird	N	LC	1					1	1	1	1		1		1	1
46	Nectariniidae	<i>Nectarinia lotenia</i>	Long-billed Sunbird	N	LC						1								

Mammals

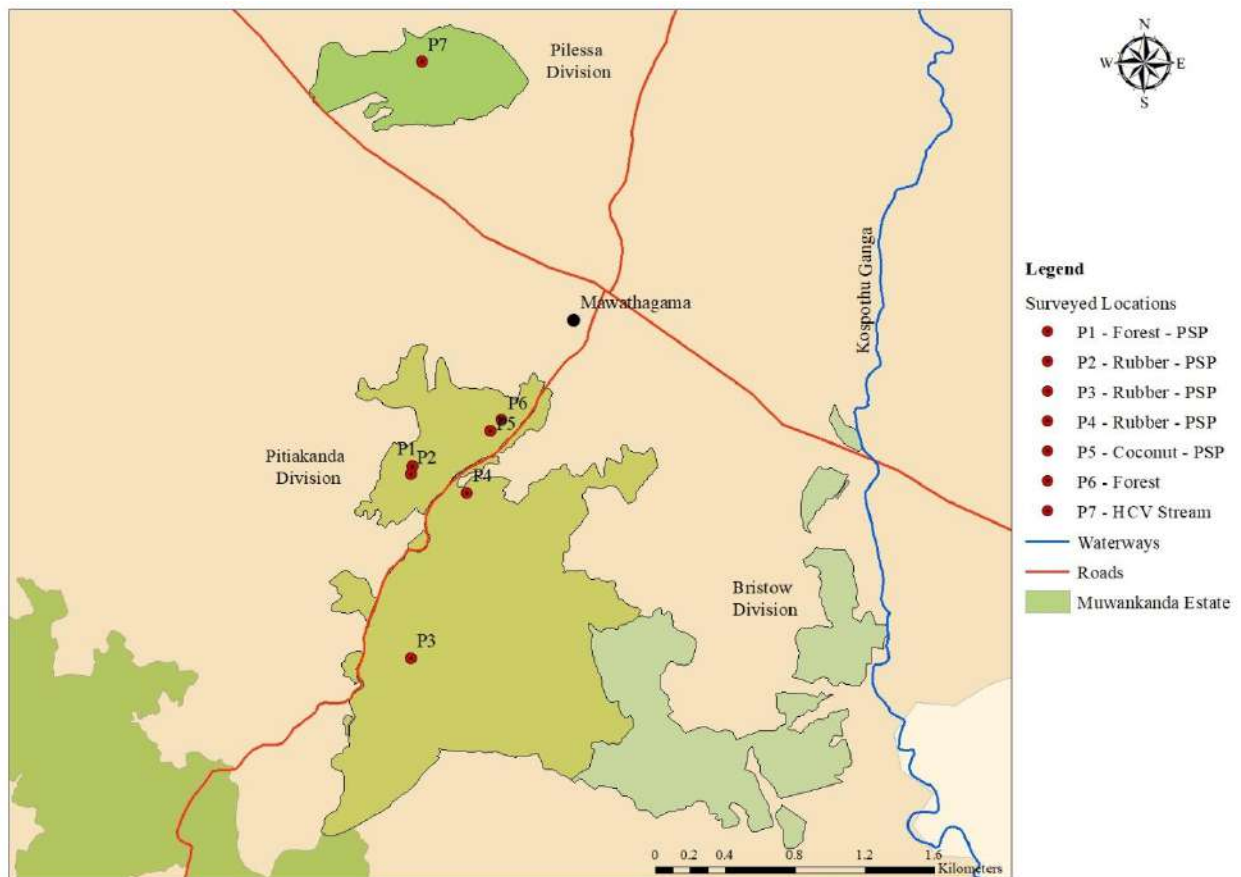
	Family	Scientific Name	Common Name	DS	CS	D76	D77	D78	D79	D80	D81	D82	D83	D84	D85	D86	D87	D88	D89
1	Manidae	Manis crassicaudata	Pangolin	N	NT		1			1									
2	Cercopithecidae	Macaca sinica	Sri Lanka toque monkey	E	LC							1							
3	Lorisidae	Loris tardigradus	Sri Lanka red slender loris	E	VU		1			1									
4	Viverridae	Paradoxurus hermaphoditus	Palm cat	N	LC						1								
5	Cervidae	Muntiacus muntjak	Barking deer	N	NT		1												
6	Suidae	Sus scrofa	Wild boar	N	LC		1			1		1	1	1	1	1	1		1
7	Tragulidae	Moschiola meminna	Sri Lanka mouse-deer	N	LC		1												
8	Hystriidae	Hystrix indica	Porcupine	N	LC					1		1			1				1
9	Sciuridae	Funambulus palmarum	Palm squirrel	N	LC	1													
10	Sciuridae	Ratufa macroura	Giant squirrel	N	LC							1							

Pitiakanda Estate

1. Introduction

Pitiakanda estate is managed under the Pitiakanda Group of Lalan Rubbers Pvt. Ltd. It is located in the Kurunegala District and has a total extent of 433.62 ha. There are three divisions in the estate and the primary crops grown are coconut and rubber. The extent of conservation areas in the estate is seven ha. There is a conservation forest in the Pitiakanda Division and several HCV sites important for the local community.

Pitiakanda estate has an intermediate climatic pattern. Ecologically the area is near the conjunction of three floristic zones, i.e., Kandy and Upper Mahaweli Floristic Zone, Northern Wet Lowland Floristic Zone and Northern Intermediate Floristic Zone. Kospothu Ganga, which is a tributary to the Deduru Oya flows near the eastern boundary of the estate.



Map of Pitiakanda Estate and the distribution of sampling sites (Table XX).

2. Methodological approach

2.1 Study locations: Altogether, 7 sampling sites were surveyed, 6 in Pitiakanda Division, and 1 site in Pilessa Division. These includes one Conservation Forest site, one secondary forest patch, PSPs in Rubber and Cinnamon, and stream with a HCV catchment area. A summary of locations sampled are given in Table 1 and the distribution of the sampling plots within the Pitiakanda estate is shown in Figure 1.

Table 1. The number of sites sampled within the Pitiakanda Estate

Division	Site	Site type	Site code	Latitude	Longitude	Ele. (m)
Pitiakanda	Conservation Forest	Forest - PSP	P1	7.42435	80.43659	229
	Rubber (2003)	Rubber - PSP	P2	7.42392	80.43651	214
	Rubber (2010)	Rubber - PSP	P3	7.41447	80.43651	314
	Rubber (1991)	Rubber - PSP	P4	7.42296	80.43939	220
	Coconut (1984)	Coconut - PSP	P5	7.42614	80.44061	210
	Secondary forest patch in C19	Forest	P6	7.42671	80.44119	220
Pilessa	Stream R13/HCV Catchment	Stream	P7	7.44512	80.43708	197

2.2 Study Period: This study was undertaken in June 2021 covering the dry season of the area.

2.3 Study techniques: Please refer Chapter 1

3. Key Findings of the Biodiversity Assessment

Based on the results of the assessments conducted in the Pitiakanda estate 124 species of plants and 97 species of animals were recorded. This included 19 species of endemic fauna, 2 species of endemic flora, 4 species of threatened fauna and 7 species of threatened flora. A summary of the species recorded under different taxonomic groups are presented in table 2. The detailed list of plants and animals observed during this study including their distribution and threat status is given in Annex 2a and 2b.

Table 2. Summary of the total fauna and flora recorded during the assessment.

Abbreviations used: **CR** - Critically Endangered; **EN** - Endangered; **VU** – Vulnerable, **NT** - Near Threatened, **DD** – Data Deficient.

Taxa	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Dragonflies	11	4	-	-	-	1	3	-
Butterflies	28	1	-	-	-	-	1	-
Freshwater Fish	5	0	-	-	-	-	1	-
Amphibians	1	1	-	-	-	1	-	-
Reptiles	7	5	-	-	1	-	-	-
Birds	39	7	-	-	-	-	1	-
Mammals	6	1	-	-	1	-	-	-
Sub-Total (Fauna)	97	19	0	0	2	2	6	0
Plants	124	2	33	-	1	6	3	1
Total (Species)	221	21	33	0	3	8	9	1

4. Important Findings of the Assessment

4.1. Critical Species

1. Yerburi's Elf (*Tetrathemis yerburii*)

An endemic and a Vulnerable species of dragonfly distributed in the wet and intermediate zones of the country. It is usually found in forests or densely vegetated habitats with standing water bodies. They are often seen in open wells with ferns and other aquatic vegetation around the mouth. Observed in the PSP in Rubber 1991 field in Pitiakanda Division (Site P4).



Yerburi's Elf. Pitiakanda Division. Image: AS

2. Molligoda's Daygecko (*Cnemaspis molligodai*)

This endemic daygecko is generally distributed in the southwestern wet lowlands in the country where it inhabits lowland rainforests and other similar densely vegetated habitats. It is uncommon towards the northern part of the wet zone and intermediate zone. Arboreal in habits, it is known as an Endangered species.



Molligoda's Daygecko. Pitiakanda Division. Image: AS

3. *Rauvolfia serpentina* (ඒකාචේරිය)

An indigenous shrub of secondary scrub lands and grassy places of the wet lowlands up to about 700 m elevations. It is an important medicinal plant. This was observed near the forest patch in the 1984 Coconut field in Pitiakanda Division.



Rauvolfia serpentina. Image: NC

5. Conclusions and Recommendations

Results of the present assessment indicates that the total species richness and the number of endemic and threatened species recorded remains equal or higher in most instances compared to previous survey done in 2016. It should be noted that some of the species recorded during the previous assessments have not been recorded during the present survey and number of new species including endemic and threatened species have been newly recorded during the present assessment. Therefore, based on this data it can be safely concluded that the species richness as well as number of critical species (endemic and threatened species) have not undergone a decline between the two assessments.

Based on the findings of this assessment and the field observations the following set of recommendations can be made.

1. The secondary forest patch in C19 coconut field is suitable for a conservation area. This forest patch, even though small in size, acts as a habitat island in the plantation landscape and is used by a number of faunal species as per the field observations made during the assessment. If conserved, it can continue to act as a refugia and a stepping stone for the species occupying and dispersing through the landscape. However, as it is located in a

human dominated landscape in the vicinity of the village, actions need to be taken to prevent illegal or unauthorized activities which can threaten the fauna and flora.

2. Please refer the list of recommendations in the main chapter for additional recommendations.



Secondary forest patch in C19 coconut field. Pitiakanda Division.

Annex 2a. The list of plant species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **I** - Introduced, **N** - Native. **CS** - Conservation Status (National Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** - Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** - Vulnerable. **D##**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	P1	P2	P3	P4	P5	P6	P7
1	Acanthaceae	<i>Asystasia variabilis</i>	ගද පුරක්	N	LC		1		1			
2	Acanthaceae	<i>Ruellia prostrata</i>	නිල් පුරක්	N	LC		1		1			
3	Amaranthaceae	<i>Achyranthes aspera</i>	කරල් හැබ	N	LC				1			1
4	Amaranthaceae	<i>Ouret lanata</i>	පොල්පළා	N	LC					1		
5	Anacardiaceae	<i>Anacardium occidentale</i>	කජු	I	NE				1			
6	Anacardiaceae	<i>Lannea coromandelica</i>	හික්	N	LC	1						
7	Annonaceae	<i>Annona reticulata</i>	වැලි ආත්තා	I	NE				1			
8	Annonaceae	<i>Huberantha korinti</i>	මීවැන්න, උල්කෝන්ද	N	LC						1	
9	Annonaceae	<i>Milusa indica</i>	කැකිලි මැස්ස	N	LC	1			1		1	
10	Apocynaceae	<i>Alstonia macrophylla</i>	හවරි තුග	I	NE	1						
11	Apocynaceae	<i>Alstonia scholaris</i>	රැක් අත්තන	N	LC	1			1			
12	Apocynaceae	<i>Anodendron parviflorum</i>	දුල්, ගැරඩි දුල්	N	VU	1			1			
13	Apocynaceae	<i>Ichnocarpus frutescens</i>	කිරි වැල්	N	LC	1						
14	Apocynaceae	<i>Rauvolfia serpentina</i>	ඒකාවේරිය	N	EN					1		
15	Apocynaceae	<i>Cryptolepis dubia</i>	වැල් රැක් අත්තන, කිරි වැල්	N	VU					1		
16	Apocynaceae	<i>Wattakaka volubilis</i>	අඟුණ	N	LC					1		
17	Araceae	<i>Alocasia macrorrhizos</i>	හබරල	I	NE				1			
18	Araceae	<i>Colocasia esculenta</i>	ගහල	N	LC				1			
19	Araceae	<i>Dieffenbachia seguine</i>		I	NE				1			
20	Araceae	<i>Syngonium angustatum</i>	වැල් කොහිල	I	NE				1			
21	Araliaceae	<i>Schefflera stellata</i>	ඉත්ත	N	LC						1	
22	Arecaceae	<i>Caryota urens</i>	කිතුල්	N	LC		1		1		1	

	Family	Scientific Name	Common Name	DS	CS	P1	P2	P3	P4	P5	P6	P7
23	Asteraceae	<i>Chromolaena odorata</i>	පොඬු සිඤ්ඤාමරන්	I	NE				1			1
24	Asteraceae	<i>Crassocephalum crepidioides</i>		I	NE							1
25	Asteraceae	<i>Cyanthillium cinereum</i>	මොණරකුඩුමිටිය	N	LC							1
26	Asteraceae	<i>Elephantopus scaber</i>	අත් අඩි, ගොඩවි	N	LC					1		
27	Asteraceae	<i>Mikania cordata</i>	වතු පාළු	I	NE	1						
28	Asteraceae	<i>Sphagneticola trilobata</i>	උදය කුමාර්	I	NE				1			
29	Bignoniaceae	<i>Oroxylum indicum</i>	තොටිල	N	LC							1
30	Cannabaceae	<i>Celtis philippensis</i>	මැදිතැල්ල	N	LC						1	
31	Cannabaceae	<i>Celtis timorensis</i>	ගුරුන්ද, ගුරුන්ද	N	LC							1
32	Cannabaceae	<i>Trema orientale</i>	ගැඹුඹ	N	LC		1					1
33	Combretaceae	<i>Terminalia catappa</i>	කොට්ටම්බා	I	NE		1					
34	Commelinaceae	<i>Commelina clavata</i>	ගිරා පළා	N	VU				1			
35	Convolvulaceae	<i>Argyreia kleiniana</i>	ගිරිනිල්ල	N	LC				1			1
36	Dioscoreaceae	<i>Dioscorea oppositifolia</i>	හිරිතල	N	NT	1						
37	Elaeocarpaceae	<i>Elaeocarpus serratus</i>	වෙරළ	N	LC				1			
38	Euphorbiaceae	<i>Croton aromaticus</i>	වැල් කැප්පෙටියා	N	LC						1	
39	Euphorbiaceae	<i>Croton hirtus</i>	ගං වෙද	I	NE					1		
40	Euphorbiaceae	<i>Euphorbia antiquorum</i>	දළක්, දල නගු	N	LC						1	
41	Euphorbiaceae	<i>Hevea brasiliensis</i>	රබර්	I	NE	1						
42	Euphorbiaceae	<i>Macaranga peltata</i>	කැන්ද	N	LC	1	1		1	1		1
43	Euphorbiaceae	<i>Mallotus philippensis</i>	හම්පිල්ල	N	LC	1			1			1
44	Euphorbiaceae	<i>Mallotus repandus</i>	වැල් කැප්පෙටියා	N	LC							1
45	Euphorbiaceae	<i>Mallotus rhamnifolius</i>	මෝල් අබේ	N	LC						1	
46	Euphorbiaceae	<i>Tragia hispida</i>	වැල් කහඹිලියා	N	LC					1		1
47	Fabaceae	<i>Abrus precatorius</i>	ඔප්පිද	N	LC			1				
48	Fabaceae	<i>Adenanthera pavonina</i>	මදුවිය, මංවාඩි	N	LC				1			
49	Fabaceae	<i>Centrosema pubescens</i>		I	NE	1						
50	Fabaceae	<i>Grona heterocarpa</i>	අත් උදුපියලිය	N	VU	1		1				

	Family	Scientific Name	Common Name	DS	CS	P1	P2	P3	P4	P5	P6	P7
51	Fabaceae	<i>Mimosa pudica</i>	නිදිකුම්බා	I	NE					1		
52	Fabaceae	<i>Mucuna bracteata</i>	මුකුණ	I	NE		1					
53	Fabaceae	<i>Neustanthus phaseoloides</i>	පෝර වැල්	I	NE			1	1			1
54	Fabaceae	<i>Senegalia caesia</i>	හිඹුරු	N	LC	1			1			
55	Fabaceae	<i>Senegalia pennata</i>	ගොඩ හිඹුරු	N	LC	1						
56	Fabaceae	<i>Senna occidentalis</i>	පැණි තෝර, හිවල් තෝර	I	NE					1		
57	Fabaceae	<i>Senna tora</i>	පෙනි තෝර	I	NE					1		
58	Hypoxidaceae	<i>Curculigo orchioides</i>	බිම් නල්	N	LC		1	1	1			
59	Lamiaceae	<i>Clerodendrum infortunatum</i>	ගස් පින්න, පින්න	N	LC	1						
60	Lamiaceae	<i>Hyptis capitata</i>		I	NE				1			1
61	Lamiaceae	<i>Leucas zeylanica</i>	ගැට තුඹ	N	LC					1		
62	Lamiaceae	<i>Ocimum americanum</i>	හීන් තලා	N	LC					1		
63	Lamiaceae	<i>Vitex altissima</i>	මිල්ල	N	NT	1						1
64	Lauraceae	<i>Cinnamomum verum</i>	කුරුඳු, පත් කුරුඳු	E	VU	1			1			
65	Lauraceae	<i>Litsea glutinosa</i>	බෝම්බි, බෝම්	N	LC	1	1		1			
66	Lauraceae	<i>Neolitsea cassia var. cassia</i>	දවුල් කුරුඳු	N	LC	1					1	1
67	Lecythidaceae	<i>Careya arborea</i>	කහට	N	LC	1						
68	Lentibulariaceae	<i>Utricularia striatula</i>		N	VU		1					
69	Loganiaceae	<i>Strychnos potatorum</i>	ඉඟිනි	N	LC					1		
70	Malpighiaceae	<i>Hiptage benghalensis</i>	පුවක් ගෙඩිය වැල්	N	LC	1					1	
71	Malvaceae	<i>Hibiscus surattensis</i>	හීන් නාපිරින්න	N	LC	1			1			
72	Malvaceae	<i>Sida rhombifolia</i> subsp. <i>rhombifolia</i>	කොටකන් බැබිල	N	LC					1		
73	Malvaceae	<i>Urena lobata</i>	අට්ට ඇපල	N	LC				1	1		
74	Malvaceae	<i>Urena lobata</i> subsp. <i>sinuata</i>	හීන් ඇපල	N	LC				1	1		1
75	Malvaceae	<i>Grewia orientalis</i>	වැල් කැලිය	N	LC	1						
76	Malvaceae	<i>Grewia tiliifolia</i>	දම්ණිය	N	LC							1
77	Malvaceae	<i>Helicteres isora</i>	ලීනිය	N	LC				1			

	Family	Scientific Name	Common Name	DS	CS	P1	P2	P3	P4	P5	P6	P7
78	Malvaceae	<i>Microcos paniculata</i>	කොහු කිරිල්ල	N	LC	1						
79	Melastomataceae	<i>Miconia crenata</i>	කටකළ බෝවිටියා	I	NE	1	1					
80	Meliaceae	<i>Cipadessa baccifera</i>	හල් බැඹිය	N	LC	1			1		1	1
81	Meliaceae	<i>Melia azedarach</i>	ලුණුමිදෙල්ල	I	DD				1			
82	Menispermaceae	<i>Anamirta cocculus</i>	නින්න වැල්	N	LC	1	1		1		1	
83	Menispermaceae	<i>Tinospora cordifolia</i>	රස කිඳු	N	LC						1	
84	Moraceae	<i>Artocarpus heterophyllus</i>	කොප්	I	NE				1			
85	Moraceae	<i>Artocarpus nobilis</i>	වල් දෙල්	E	LC							1
86	Moraceae	<i>Ficus exasperata</i>	බු තෙදිය	N	LC				1		1	
87	Moraceae	<i>Ficus mollis</i>	වල් අරළු	N	LC						1	
88	Myrtaceae	<i>Syzygium cumini</i>	මා දං, දං	N	LC	1						
89	Oleaceae	<i>Jasminum flexile</i>		N	LC	1	1		1			
90	Opiliaceae	<i>Cansjera rheedii</i>	අටමුරු	N	LC	1						
91	Passifloraceae	<i>Passiflora foetida</i>	පඩ ගෙඩි	I	NE							1
92	Passifloraceae	<i>Passiflora suberosa</i>	නින්න	I	NE							1
93	Phyllanthaceae	<i>Aporosa cardiosperma</i>	කැබැල්ල	N	LC	1						
94	Phyllanthaceae	<i>Breynia androgyna</i>	ජපන් බටු	N	LC				1		1	
95	Phyllanthaceae	<i>Bridelia retusa</i>	කැට කැල	N	LC	1						
96	Phyllanthaceae	<i>Margaritaria indica</i>	කරව්, මහ කරවු	N	LC						1	1
97	Phyllanthaceae	<i>Phyllanthus amarus</i>	පිටවක්කා	N	NE				1			1
98	Piperaceae	<i>Peperomia pellucida</i>	දිය නිප්පිලි	I	NE				1			
99	Piperaceae	<i>Piper fallax</i>	වල් ගම්මිරිස්	N	LC							1
100	Piperaceae	<i>Piper nigrum</i>	ගම්මිරිස්	I	NE				1			
101	Poaceae	<i>Axonopus compressus</i>	පොතු නණ	I	NE	1				1		
102	Poaceae	<i>Bambusa vulgaris</i>	කහ උණ	I	NE							1
103	Rhamnaceae	<i>Ventilago madraspatana</i>	යකඩ වැල්	N	LC							1
104	Rhamnaceae	<i>Ziziphus oenopolia</i>	හීන් එරමිණියා	N	LC	1			1			
105	Rhizophoraceae	<i>Carallia brachiata</i>	දවට	N	LC						1	
106	Rubiaceae	<i>Gynochthodes umbellata</i>	කිරි වැල්	N	LC	1						

	Family	Scientific Name	Common Name	DS	CS	P1	P2	P3	P4	P5	P6	P7
107	Rubiaceae	<i>Ophiorrhiza mungos</i>	දත් කැටිය	N	LC	1			1			
108	Rubiaceae	<i>Psydrax dicoccos</i> var. <i>dicoccos</i>	පණු කරව්	N	LC							1
109	Rubiaceae	<i>Spermacoce latifolia</i>		I	NE				1			
110	Rubiaceae	<i>Tarenna asiatica</i>	තරණ	N	LC	1				1	1	
111	Rutaceae	<i>Atalantia ceylanica</i>	යකිතාරං	N	LC	1						
112	Rutaceae	<i>Clausena indica</i>	මී ගොං කරපිංචා	N	LC							1
113	Rutaceae	<i>Murraya paniculata</i>	ඇට්ටේරියා	N	LC	1			1		1	1
114	Rutaceae	<i>Toddalia asiatica</i>	කුඩුමිරිස්ස	N	LC							1
115	Salicaceae	<i>Flacourtia indica</i>	උගුරුස්ස	N	LC				1			
116	Sapindaceae	<i>Allophylus cobbe</i>	කොබ්බෑ	N	LC	1	1		1			1
117	Sapindaceae	<i>Cardiospermum microcarpum</i>	පෙනෙල වැල්	N	NT					1		
118	Sapindaceae	<i>Schleichera oleosa</i>	කෝන්, අලොන් ගස්	N	LC						1	
119	Simaroubaceae	<i>Brucea javanica</i>	නිත්ත කොහොඹ	N	LC	1					1	
120	Solanaceae	<i>Physalis angulata</i>		I	NE							1
121	Solanaceae	<i>Solanum violaceum</i>	නිබ්බටු, නිත්ත බටු	N	LC					1		
122	Symplocaceae	<i>Symplocos acuminata</i>	බෝඹු	N	LC	1						
123	Verbenaceae	<i>Lantana camara</i>	ගදපාන	I	NE				1	1		
124	Verbenaceae	<i>Stachytarpheta jamaicensis</i>	බලුනකුට	I	NE				1			

Annex 2b. The list of animal species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **N** - Native, **I** – Introduced, **M** - Migrant. **CS** - Conservation Status (National Conservation Status or * Global Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** – Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** – Vulnerable. **D##**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	P1	P2	P3	P4	P5	P6	P7
Dragonflies												
1	Calopterygidae	<i>Vestails nigrescens</i>	Black-tipped flashwing	N	LC*					1		
2	Platycnemididae	<i>Copera marginipes</i>	Yellow Featherleg	N	LC				1			
3	Platycnemididae	<i>Elattoneura centralis</i>	Dark-glittering Threadtail	E	LC*				1	1		
4	Platystictidae	<i>Ceylonosticta brincki</i>	Brinck's Shadowdamsel	E	LC*				1			
5	Platystictidae	<i>Platysticta apicalis</i>	Dark Forestdamsel	E	NT*				1			
6	Libellulidae	<i>Tetrathemis yerburii</i>	Yerbury's Elf	E	VU*				1			
7	Libellulidae	<i>Orthetrum pruinosum</i>	Pink Skimmer	N	NT	1			1			1
8	Libellulidae	<i>Orthetrum sabina</i>	Green Skimmer	N	LC							1
9	Libellulidae	<i>Diplacodes trivialis</i>	Blue Percher	N	LC							1
10	Libellulidae	<i>Neurothemis intermedia</i>	Paddyfield Parasol	N	NT	1						1
11	Libellulidae	<i>Neurothemis tullia</i>	Pied Parasol	N	LC					1		
Butterflies												
1	Papilionidae	<i>Pachliopta aristolochiae</i>	Common Rose	N	LC			1		1		
2	Papilionidae	<i>Papilio polytes</i>	Common Mormon	N	LC	1						
3	Papilionidae	<i>Papilio polymnestor</i>	Blue Mormon	N	LC			1	1			
4	Papilionidae	<i>Graphium teredon</i>	Narrow-banded Bluebottle	N	LC			1			1	
5	Papilionidae	<i>Graphium agamemnon</i>	Tailed Jay	N	LC				1		1	

	Family	Scientific Name	Common Name	DS	CS	P1	P2	P3	P4	P5	P6	P7
6	Pieridae	<i>Appias galene</i>	Sri Lankan Lesser Albatross	E	LC				1			
7	Pieridae	<i>Eurema hecabe</i>	Common Grass Yellow	N	LC		1		1			
8	Nymphalidae	<i>Parantica aglea</i>	Glassy Tiger	N	LC	1			1			
9	Nymphalidae	<i>Euploea core</i>	Common Crow	N	LC	1						
10	Nymphalidae	<i>Ariadne ariadne</i>	Angled Castor	N	LC							1
11	Nymphalidae	<i>Acraea terpsicore</i>	Tawny Coster	N	LC							1
12	Nymphalidae	<i>Junonia iphita</i>	Chocolate Soldier	N	LC	1		1	1	1		
13	Nymphalidae	<i>Junonia almana</i>	Peacock Pansy	N	LC			1				
14	Nymphalidae	<i>Neptis hylax</i>	Common Sailor	N	LC	1			1			1
15	Nymphalidae	<i>Melanitis leda</i>	Common Evening Brown	N	LC	1					1	
16	Nymphalidae	<i>Ypthima ceylonica</i>	White Four-ring	N	LC					1		
17	Nymphalidae	<i>Elymnias hypermnestra</i>	Common Palmfly	N	LC	1					1	
18	Lycaenidae	<i>Spalgis epeus</i>	Apefly	N	LC	1						
19	Lycaenidae	<i>Jamides bochus</i>	Dark Cerulean	N	LC							1
20	Lycaenidae	<i>Jamides celeno</i>	Common Cerulean	N	LC		1					
21	Lycaenidae	<i>Zizula hylax</i>	Tiny Grass Blue	N	LC							1
22	Hesperiidae	<i>Hasora chromus</i>	Common Banded Awl	N	LC	1						
23	Hesperiidae	<i>Tagiades japetus</i>	Common Snow Flat	N	LC	1						
24	Hesperiidae	<i>Spialia galba</i>	Grizzled Skipper	N	LC					1		
25	Hesperiidae	<i>Ampittia dioscorides</i>	Bush Hopper	N	LC					1		
26	Hesperiidae	<i>Iambrix salsala</i>	Chestnut Bob	N	LC					1		
27	Hesperiidae	<i>Taractrocera maevius</i>	Common Grass Dart	N	LC					1		
28	Hesperiidae	<i>Pelopidas agna</i>	Little Branded Swift	N	NT					1		
Freshwater Fish												
1	Cyprinidae	<i>Puntius bimaculatus</i>	Redside Barb	N	LC				1			
2	Danionidae	<i>Devario malabaricus</i>	Giant Danio	N	LC				1			
3	Danionidae	<i>Rasbora microcephalus</i>	Carverii rasbora	N	LC				1			

	Family	Scientific Name	Common Name	DS	CS	P1	P2	P3	P4	P5	P6	P7
4	Cobitidae	<i>Lepidocephalichthys thermalis</i>	Common Spiny Loach	N	LC				1			
5	Channidae	<i>Channa kelaartii</i>	Brown Snakehead	N	NT				1			
Amphibians												
1	Rhacophoridae	<i>Pseudophilautus popularis</i>	Common shrub frog	E	VU*				1		1	
Reptiles												
1	Agamidae	<i>Calotes calotes</i>	Green forest Lizard	N	LC							1
2	Agamidae	<i>Calotes versicolor</i>	Garden Lizard	N	LC							1
3	Agamidae	<i>Otocryptis wiegmanni</i>	Sri Lankan Kangaroo Lizard	E	LC*			1				
4	Gekkonidae	<i>Cnemaspis melligodai</i>	Melligoda's Daygecko	E	EN*	1		1	1			
5	Scincidae	<i>Lankascincus dorsicatenatus</i>	Catenated lanka skink	E	LC*				1			
6	Scincidae	<i>Lankascincus fallax</i>	Common Supple Skink	E	LC*	1	1	1				
7	Scincidae	<i>Eutropis madaraszii</i>	Spotted Skink	E	LC*							1
Birds												
1	Accipitridae	<i>Spizaetus cirrhatus</i>	Changeable Hawk-eagle	N	LC	1					1	1
2	Accipitridae	<i>Spilornis cheela</i>	Crested Serpent-eagle	N	LC		1	1				
3	Accipitridae	<i>Accipiter badius</i>	Shikra	N	LC	1						
4	Accipitridae	<i>Haliaeetus leucogaster</i>	White-bellied Sea-eagle	N	LC							1
5	Columbidae	<i>Ducula aenea</i>	Green Imperial-Pigeon	N	LC						1	
6	Columbidae	<i>Treron pompadora</i>	Sri Lanka Green-Pigeon	E	LC	1					1	1
7	Columbidae	<i>Stigmatopelia chinensis</i>	Spotted Dove	N	LC						1	
8	Psittacidae	<i>Loriculus beryllinus</i>	Sri Lanka Hanging Parrot	E	LC				1			
9	Apodidae	<i>Cypsiurus balasiensis</i>	Asian Palm-swift	N	LC		1			1	1	1
10	Hemiprocnidae	<i>Hemiproctne coronata</i>	Crested Treeswift	N	LC	1	1	1	1			1
11	Alcedinidae	<i>Halcyon smyrnensis</i>	White-throated Kingfisher	N	LC			1				1
12	Ramphastidae	<i>Megalaima zeylanica</i>	Brown-headed Barbet	N	LC	1			1	1	1	
13	Ramphastidae	<i>Megalaima rubricapillus</i>	Sri Lanka Barbet	E	LC	1		1			1	1

	Family	Scientific Name	Common Name	DS	CS	P1	P2	P3	P4	P5	P6	P7
14	Ramphastidae	<i>Megalaima flavifrons</i>	Sri Lanka Yellow-fronted Barbet	E	LC	1	1	1				
15	Picidae	<i>Dinopium psarodes</i>	Lesser Sri Lanka Flameback	E	LC	1						
16	Picidae	<i>Picus chlorolophus</i>	Lesser Yellownape	N	NT		1		1			
17	Aegithinidae	<i>Aegithina tiphia</i>	Common Iora	N	LC	1						
18	Campephagidae	<i>Pericrocotus flammeus</i>	Scarlet Minivet	N	LC				1		1	
19	Campephagidae	<i>Pericrocotus cinnamomeus</i>	Small Minivet	N	LC				1			1
20	Campephagidae	<i>Hemipus picatus</i>	Bar-winged Flycatcher-shrike	N	LC							1
21	Campephagidae	<i>Coracina melanoptera</i>	Black-headed Cuckoo-shrike	N	LC							1
22	Oriolidae	<i>Oriolus xanthornus</i>	Black-hooded Oriole	N	LC						1	
23	Dicruridae	<i>Dicrurus caerulescens</i>	White-bellied Drongo	N	LC				1	1		
24	Rhipiduridae	<i>Rhipidura aureola</i>	White-browed Fantail	N	LC						1	
25	Monarchiidae	<i>Hypothymis azurea</i>	Black-naped Monarch	N	LC							1
26	Corvidae	<i>Corvus splendens</i>	House Crow	N	LC					1	1	
27	Hirundinidae	<i>Hirundo hyperythra</i>	Sri Lanka swallow	E	LC	1		1				1
28	Pycnonotidae	<i>Pycnonotus melanicterus</i>	Black-crested Bulbul	E	LC	1						
29	Pycnonotidae	<i>Pycnonotus cafer</i>	Red-vented Bulbul	N	LC	1	1		1	1	1	1
30	Pycnonotidae	<i>Iole indica</i>	Yellow-browed Bulbul	N	LC	1			1			
31	Sylviidae	<i>Orthotomus sutorius</i>	Common Tailorbird	N	LC				1	1	1	1
32	Zosteropidae	<i>Zosterops palpebrosus</i>	Oriental White Eye	N	LC		1					1
33	Sturnidae	<i>Acridotheres tristis</i>	Common Myna	N	LC	1				1	1	
34	Muscicapidae	<i>Copsychus saularis</i>	Oriental Magpie Robin	N	LC					1		
35	Muscicapidae	<i>Cyornis tickelliae</i>	Tickell's Blue Flycatcher	N	LC	1	1	1				1
36	Muscicapidae	<i>Copsychus malabaricus</i>	White Rumped Shama	N	LC	1						
37	Dicaeidae	<i>Dicaeum erythrorhynchos</i>	Pale-billed Flowerpecker	N	LC	1	1					

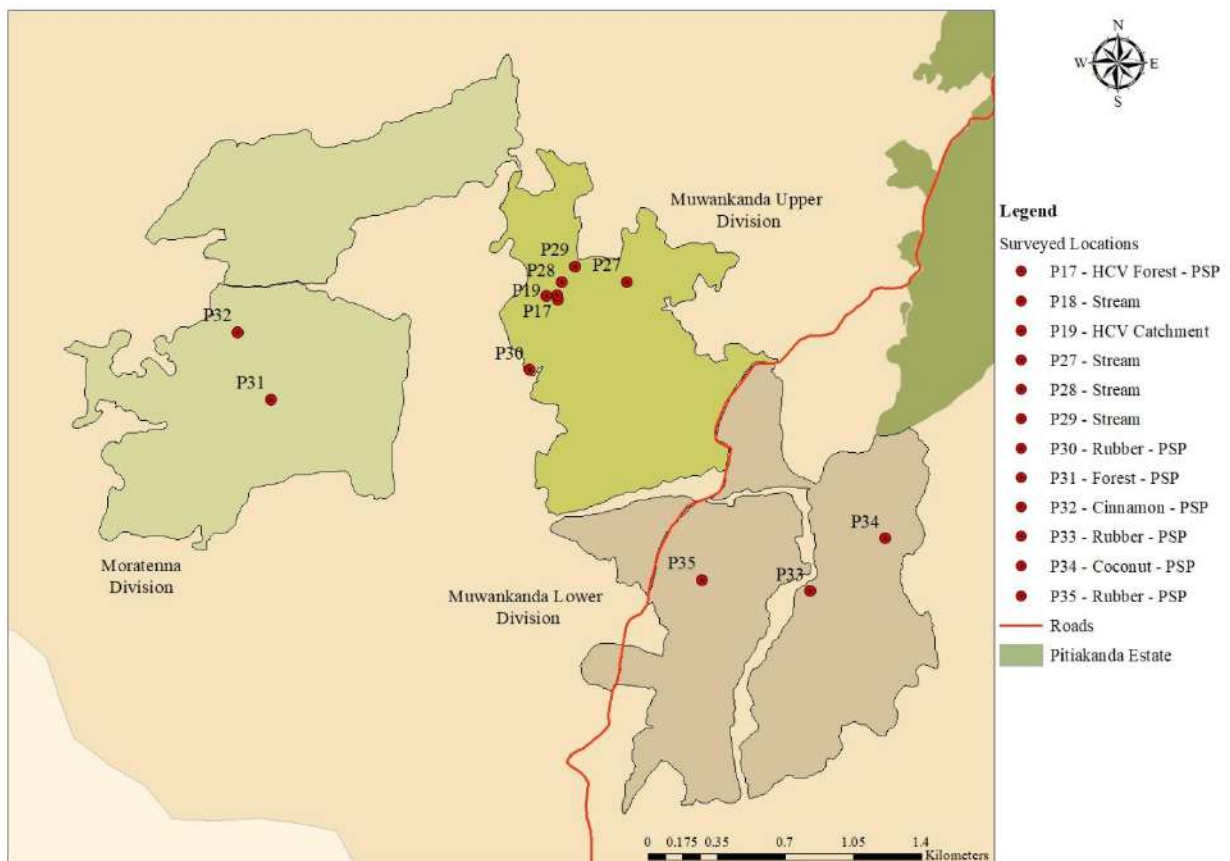
	Family	Scientific Name	Common Name	DS	CS	P1	P2	P3	P4	P5	P6	P7
38	Nectariniidae	<i>Nectarinia zeylonica</i>	Purple-rumped Sunbird	N	LC				1		1	1
39	Estrildidae	<i>Lonchura striata</i>	White-rumped Munia	N	LC							1
Mammals												
1	Pteropodidae	<i>Pteropus giganteus</i>	Flying fox	N	LC				1			
2	Cercopithecidae	<i>Semnopithecus vetulus</i>	Sri Lanka Purple-faced langur	E	EN			1	1			
3	Herpestidae	<i>Herpestes edwardsii</i>	Grey Mongoose	N	LC					1		
4	Suidae	<i>Sus scrofa</i>	Wild boar	N	LC	1	1					
5	Hystricidae	<i>Hystrix indica</i>	Porcupine	N	LC	1						
6	Sciuridae	<i>Funambulus palmarum</i>	Palm squirrel	N	LC					1		

Muwankanda Estate

1. Introduction

Muwankanda estate is managed under the Pitiakanda Group of Lalan Rubbers Pvt. Ltd. It is located in the Kurunegala District and has a total extent of 592.5 ha. There are three divisions in the estate and the primary crops grown are coconut and rubber. The estate has a High Conservation Value Forest identified in an abandoned cinchona plantation in Upper Division and another conservation areas in the Morathenna Division. Altogether the estate has a 49.09 ha of conservation areas as well as several HCV sites important for providing for the freshwater needs of the local communities.

Muwankanda estate has an intermediate climatic pattern. Ecologically the area is near the conjunction of three floristic zones, i.e., Kandy and Upper Mahaweli Floristic Zone, Northern Wet Lowland Floristic Zone and Northern Intermediate Floristic Zone. The estate is mainly located in the Deduru Oya river basin while some areas of the Lower Division is in the Maa river basin.



Map of Muwankanda Estate and the distribution of sampling sites (Table XX).

2. Methodological approach

2.1 Study locations: Altogether, 12 sampling sites were surveyed, 7 in Upper Division, 3 in Lower Division and 2 in Moratenna Division. These includes one HCV Forest site, one Conservation Forest, PSPs in Rubber, Coconut and Cinnamon, HCV catchment areas and a several streams. A summary of locations sampled are given in Table 1 and the distribution of the sampling plots within the Muwankanda estate is shown in Figure 1.

Table 1. The number of sites sampled within the Muwankanda Estate

Division	Site	Site type	Site code	Latitude	Longitude	Ele. (m)
Upper	Cinchona HCV Forest	Forest - PSP	P17	7.41164	80.41724	296
	Stream near Cinchona field	Stream	P18	7.41185	80.41722	297
	HCV Catchment	Catchment	P19	7.41182	80.41672	340
	Stream R31	Stream	P27	7.41247	80.42043	229
	Stream R24/31	Stream	P28	7.41246	80.41742	323
	Stream R24	Stream	P29	7.41318	80.41805	308
	Rubber Old	Rubber - PSP	P30	7.40842	80.41595	333
Moratenna	Conservation Forest	Forest - PSP	P31	7.40703	80.40401	510
	Cinnamon	Cinnamon - PSP	P32	7.41014	80.40248	430
Lower	Rubber R38	Rubber - PSP	P33	7.39821	80.42891	171
	Coconut C14	Coconut - PSP	P34	7.40063	80.43235	170
	Rubber Young	Rubber - PSP	P35	7.39872	80.42391	162

2.2 Study Period: This study was undertaken in June 2021 covering the dry season of the area.

2.3 Study techniques: Please refer Chapter 1

3. Key Findings of the Biodiversity Assessment

Based on the results of the assessments conducted in the Muwankanda estate 134 species of plants and 140 species of animals were recorded. This included 36 species of endemic fauna, 5 species of endemic flora, 7 species of threatened fauna and 5 species of threatened flora. A summary of the species recorded under different taxonomic groups are presented in table 2.

The detailed list of plants and animals observed during this study including their distribution and threat status is given in Annex 2a and 2b.

Table 2. Summary of the total fauna and flora recorded during the assessment.

Abbreviations used: **CR** - Critically Endangered; **EN** - Endangered; **VU** – Vulnerable, **NT** - Near Threatened, **DD** – Data Deficient.

Taxa	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Dragonflies	20	8	-	-	1	3	6	-
Butterflies	36	4	2	-	-	1	4	-
Freshwater Fish	9	2	-	-	-	-	3	-
Amphibians	4	4	-	-	-	1	2	-
Reptiles	9	5	-	-	-	-	-	-
Birds	53	12	-	-	-	-	4	-
Mammals	9	1	-	-	-	-	1	-
Sub-Total (Fauna)	140	36	2	0	1	6	20	0
Plants	134	5	37	-	-	5	2	2
Total (Species)	274	41	39	0	1	11	22	2

4. Important Findings of the Assessment

4.1. Critical Species

1. Wall's Shadowdamsel (*Ceylonosticta walli*)

This endemic and Endangered damselfly species is distributed only in the northern wet zone of Sri Lanka. It can be found in lowlands and mid elevations in association of forests and similar densely vegetated habitats. In Muwankanda it was observed in a several stream sites in the Upper Division.



Wall's Shadowdamsel. Upper Division, Muwankanda. Image: AS

4.1. Critical Habitats

Cinchona HCV Forest

A dense secondary forest established in an abandoned cinchona plantation. There are streams and identified catchment areas adjoining the HCV forest area. These habitats support many endemic species of fauna and flora including some threatened species as well. Some observed endemic species in the area are the damselfly Wall's Shadowdamsel, Corrugated Water Frog, Kandian Shrub Frog, Catenated Lanka skink, Greater Flameback and the tree *Artocarpus nobilis*. The endemic Hump-nosed Lizard is also known to occur in the forest patch.



Cinchona HCV Forest, Upper Division, Muwankanda Estate (Site P7)

5. Conclusions and Recommendations

Results of the present assessment indicates that the total species richness and the number of endemic and threatened species recorded remains equal or higher in most instances compared to previous survey done in 2016. It should be noted that some of the species recorded during the previous assessments have not been recorded during the present survey and number of new species including endemic and threatened species have been newly recorded during the present assessment. Therefore, based on this data it can be safely

concluded that the species richness as well as number of critical species (endemic and threatened species) have not undergone a decline between the two assessments.

1. Stream ecosystems in the estate should not be disturbed.
2. Streamside vegetation is encouraged to be conserved as they provide critical habitats for the rare and threatened species observed in the area.
3. Please refer the list of recommendations in the main report for additional recommendations.

Annex 2a. The list of plant species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **I** - Introduced, **N** - Native. **CS** - Conservation Status (National Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** - Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** - Vulnerable. **D##**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	P17	P18	P19	P27	P28	P29	P30	P31	P32	P33	P34	P35
1	Acanthaceae	<i>Asystasia variabilis</i>	ගද පුරුක්	N	LC				1		1					1	
2	Acanthaceae	<i>Ecbolium ligustrinum</i>	කවු තුඹ, එක්වැරණිය	N	LC				1		1						
3	Acanthaceae	<i>Nicotaba betonica</i>	සුදු පුරුක්	N	LC				1								
4	Acanthaceae	<i>Rostellularia procumbens</i>	මයානි	N	LC									1			
5	Acanthaceae	<i>Ruellia prostrata</i>	නිල් පුරුක්	N	LC				1	1							
6	Acanthaceae	<i>Thunbergia alata</i>		I	NE				1								
7	Anacardiaceae	<i>Lannea coromandelica</i>	හික්	N	LC											1	
8	Annonaceae	<i>Artabotrys hexapetalus</i>	යකඩ වැල්	N	VU	1				1							
9	Annonaceae	<i>Artabotrys zeylanicus</i>	කළු බඹර වැල්	N	LC						1						
10	Annonaceae	<i>Milium indica</i>	කැකිලි මැස්ස	N	LC						1						
11	Apocynaceae	<i>Alstonia macrophylla</i>	හවරි නූග	I	NE				1			1	1				1
12	Apocynaceae	<i>Alstonia scholaris</i>	රුක් අත්තන	N	LC						1	1	1		1		1
13	Apocynaceae	<i>Anodendron parviflorum</i>	දුල්, ගැරඩි දුල්	N	VU	1						1					
14	Apocynaceae	<i>Ichnocarpus frutescens</i>	කිරි වැල්	N	LC									1			
15	Apocynaceae	<i>Tabernaemontana dichotoma</i>	දිවි කදුරු	E	LC	1					1						1
16	Araceae	<i>Colocasia esculenta</i>	ගහල	N	LC				1								
17	Araceae	<i>Lagenandra ovata</i>	කෙටෙල, වැකුල	N	LC										1		
18	Arecaceae	<i>Areca catechu</i>	පුවක්	I	NE						1						
19	Arecaceae	<i>Calamus thwaitesii</i>	මා වේ වැල්	N	VU	1											
20	Arecaceae	<i>Caryota urens</i>	කිතුල්	N	LC	1	1		1	1	1		1		1		1
21	Asteraceae	<i>Chromolaena odorata</i>	පොඩි සිඤ්ඤාමරන්	I	NE	1							1	1		1	

	Family	Scientific Name	Common Name	DS	CS	P17	P18	P19	P27	P28	P29	P30	P31	P32	P33	P34	P35
22	Asteraceae	<i>Crassocephalum crepidioides</i>		I	NE								1	1			
23	Asteraceae	<i>Cyanthillium cinereum</i>	මොණරකුඩුමිවිය	N	LC								1	1		1	
24	Asteraceae	<i>Emilia sonchifolia</i>	කඩුපහර	N	LC						1						
25	Asteraceae	<i>Mikania cordata</i>	වතු පාළු	I	NE				1		1		1	1			
26	Begoniaceae	<i>Begonia hirtella</i>	හක් ඇඹල	I	NE						1						
27	Cannabaceae	<i>Celtis philippensis</i>	මදිනල්ල	N	LC	1			1								
28	Cannabaceae	<i>Celtis timorensis</i>	ගුරුන්ද, ගුරුන්ද	N	LC	1	1		1		1						
29	Cannabaceae	<i>Trema orientale</i>	ගඩුඹ	N	LC	1											
30	Cleomaceae	<i>Cleome rutidosperma</i>		N	LC								1			1	
31	Combretaceae	<i>Terminalia arjuna</i>	කුඹුක්	N	LC					1					1		
32	Commelinaceae	<i>Commelina clavata</i>	ගිරා පළා	N	VU				1								
33	Commelinaceae	<i>Commelina diffusa</i>	ගිරා පළා, තණ පළා	N	LC					1	1						
34	Convolvulaceae	<i>Argyrea kleiniana</i>	ගිරිනිල්ල	N	LC				1			1		1	1	1	
35	Convolvulaceae	<i>Xenostegia tridentata</i>	හවරි මදු, හීන් මදු	N	LC									1	1		
36	Costaceae	<i>Hellenia speciosa</i>	තෙඹු	N	LC						1						
37	Dichapetalaceae	<i>Dichapetalum gelonioides</i>	බලු තකුට	N	LC	1											
38	Elaeocarpaceae	<i>Elaeocarpus serratus</i>	වෙරළ	N	LC				1								
39	Euphorbiaceae	<i>Croton hirtus</i>	ගං වෙද	I	NE									1		1	
40	Euphorbiaceae	<i>Hevea brasiliensis</i>	රබර්	I	NE	1					1						1
41	Euphorbiaceae	<i>Macaranga peltata</i>	කැන්ද	N	LC	1	1		1	1	1	1				1	1
42	Euphorbiaceae	<i>Mallotus eriocarpus</i>	බුළු පෙත්ත	N	LC								1				
43	Euphorbiaceae	<i>Mallotus philippensis</i>	හම්පිල්ල	N	LC	1						1					
44	Euphorbiaceae	<i>Mallotus repandus</i>	වැල් කැප්පෙටියා	N	LC	1	1			1							
45	Euphorbiaceae	<i>Mallotus rhamnifolius</i>	මෝල් ඇබේ	N	LC	1											
46	Euphorbiaceae	<i>Mallotus tetracoccus</i>	බු කැන්ද	N	LC								1				
47	Fabaceae	<i>Abrus precatorius</i>	ඔලිද	N	LC												1
48	Fabaceae	<i>Centrosema pubescens</i>		I	NE					1							

	Family	Scientific Name	Common Name	DS	CS	P17	P18	P19	P27	P28	P29	P30	P31	P32	P33	P34	P35
49	Fabaceae	<i>Gliricidia sepium</i>	වැටමාර	I	NE						1			1		1	
50	Fabaceae	<i>Grona heterophylla</i>	මහ උඳුපියලිය	N	LC						1	1			1		
51	Fabaceae	<i>Grona triflora</i>	හීන් උඳුපියලිය	N	LC				1								
52	Fabaceae	<i>Mimosa diplotricha</i> var. <i>diplotricha</i>	වැල් නිදිකුම්බා	I	NE								1				
53	Fabaceae	<i>Mimosa pudica</i>	නිදිකුම්බා	I	NE						1	1		1		1	
54	Fabaceae	<i>Mucuna bracteata</i>	මුකුණ	I	NE				1								1
55	Fabaceae	<i>Neustanthus phaseoloides</i>	පෝර වැල්	I	NE				1	1	1	1			1	1	
56	Fabaceae	<i>Senegalia caesia</i>	හීඹුරු	N	LC	1	1		1	1		1					
57	Hypoxidaceae	<i>Curculigo orchioides</i>	බිම් තල්	N	LC										1		1
58	Lamiaceae	<i>Hyptis capitata</i>		I	NE				1		1						
59	Lamiaceae	<i>Mesosphaerum suaveolens</i>	අලි තල	I	NE												1
60	Lamiaceae	<i>Tectona grandis</i>	තේක්ක	I	NE								1				
61	Lamiaceae	<i>Vitex altissima</i>	මිලේල	N	NT							1		1			
62	Lauraceae	<i>Cinnamomum verum</i>	කුරුඳු, පත් කුරුඳු	E	VU										1		1
63	Lauraceae	<i>Litsea glutinosa</i>	බෝම්බි, බෝම්	N	LC	1					1				1		
64	Lauraceae	<i>Litsea longifolia</i>	රත් කැලිය	E	DD								1				
65	Lauraceae	<i>Neolitsea cassia</i> var. <i>cassia</i>	දවුල් කුරුඳු	N	LC	1			1	1		1	1				
66	Lecythidaceae	<i>Barringtonia racemosa</i>	දිය මිදෙල්ල	N	LC										1		
67	Loganiaceae	<i>Strychnos minor</i>	කදුරු කැටිය වැල්	N	LC						1						
68	Magnoliaceae	<i>Magnolia champaca</i>	සපු	I	NE								1				
69	Malpighiaceae	<i>Hiptage benghalensis</i>	පුවක් ගෙඩිය වැල්	N	LC	1							1				
70	Malvaceae	<i>Hibiscus surattensis</i>	හීන් නාපිරිත්ත	N	LC				1								
71	Malvaceae	<i>Sida rhombifolia</i> subsp. <i>rhombifolia</i>	කොටිකන් බැබිල	N	LC						1	1					
72	Malvaceae	<i>Urena lobata</i>	පව්ව අපුල	N	LC							1				1	

	Family	Scientific Name	Common Name	DS	CS	P17	P18	P19	P27	P28	P29	P30	P31	P32	P33	P34	P35
73	Malvaceae	<i>Urena lobata</i> subsp. <i>sinuata</i>	හීන් ඇපල	N	LC						1			1			1
74	Malvaceae	<i>Ceiba pentandra</i>	කොට්ට පුලුන්	I	NE					1							
75	Malvaceae	<i>Grewia orientalis</i>	වැල් කැලිය	N	LC						1		1				
76	Malvaceae	<i>Grewia tiliifolia</i>	දම්ණිය	N	LC								1				
77	Malvaceae	<i>Microcos paniculata</i>	කොහු කිරිල්ල	N	LC	1			1		1	1	1	1			
78	Malvaceae	<i>Pterospermum suberifolium</i>	වෙලන්	N	LC	1							1				
79	Malvaceae	<i>Theobroma cacao</i>	කොකෝවා	I	NE				1								
80	Melastomataceae	<i>Memecylon umbellatum</i>	කොර කහ	N	LC												1
81	Melastomataceae	<i>Miconia crenata</i>	කටකළ බෝවිටියා	I	NE		1					1		1			1
82	Melastomataceae	<i>Osbeckia octandra</i>	හීන් බෝවිටියා	E	LC		1						1				
83	Meliaceae	<i>Cipadessa baccifera</i>	හල් බැඹිය	N	LC				1			1	1	1			
84	Meliaceae	<i>Melia azedarach</i>	ලූණුම් දෙල්ල	I	DD				1		1						
85	Meliaceae	<i>Swietenia macrophylla</i>	මැහෝගනී	I	NE						1						
86	Menispermaceae	<i>Anamirta cocculus</i>	නින්ත වැල්	N	LC	1	1		1	1			1				1
87	Menispermaceae	<i>Cissampelos pareira</i>	දියමින්න, යුස	N	LC	1											
88	Menispermaceae	<i>Cyclea peltata</i>	කැහිපින්නං	N	LC						1	1	1				
89	Moraceae	<i>Artocarpus heterophyllus</i>	කොස්	I	NE	1				1		1					1
90	Moraceae	<i>Artocarpus nobilis</i>	වල් දෙල්	E	LC	1											
91	Moraceae	<i>Ficus exasperata</i>	බු තෙදිය	N	LC				1	1			1				1
92	Moraceae	<i>Ficus hispida</i>	කොට දිඹුල	N	LC		1		1				1		1		
93	Moraceae	<i>Ficus tinctoria</i>	වල් ඇහැටු	N	LC						1						
94	Moraceae	<i>Ficus tjakela</i>	කිරිපෙල්ල	N	LC				1		1		1	1			1
95	Moraceae	<i>Streblus asper</i>	ගැට තෙටුල්	N	LC						1						
96	Oleaceae	<i>Jasminum flexile</i>		N	LC	1					1						
97	Oxalidaceae	<i>Oxalis barrelieri</i>		I	NE								1	1			
98	Pandanaceae	<i>Pandanus amaryllifolius</i>	රම්පේ	I	NE						1						

	Family	Scientific Name	Common Name	DS	CS	P17	P18	P19	P27	P28	P29	P30	P31	P32	P33	P34	P35
99	Pandanaceae	<i>Pandanus kaida</i>	වැටකෙයියා	N	LC						1						
100	Phyllanthaceae	<i>Aporosa cardiosperma</i>	කැබැල්ල	N	LC										1		
101	Phyllanthaceae	<i>Breynia androgyna</i>	ජපන් බඩු	N	LC	1			1		1				1		1
102	Phyllanthaceae	<i>Breynia retusa</i>	වල් මූරුගා, වා	N	LC									1			
103	Phyllanthaceae	<i>Breynia vitis-idaea</i>	ගස් කැසිල	N	LC						1						
104	Phyllanthaceae	<i>Bridelia retusa</i>	කැට කැල	N	LC						1			1			
105	Phyllanthaceae	<i>Margaritaria indica</i>	කරව්, මහ කරවු	N	LC				1			1					
106	Phyllanthaceae	<i>Phyllanthus amarus</i>	පිටවක්කා	N	NE									1			1
107	Piperaceae	<i>Peperomia pellucida</i>	දිය නිප්පිලි	I	NE												1
108	Piperaceae	<i>Piper nigrum</i>	ගම්මිරිස්	I	NE	1			1	1							
109	Poaceae	<i>Chrysopogon aciculatus</i>	තුන්තිරි, චන්ද	N	LC									1			
110	Rhamnaceae	<i>Ziziphus oenopolia</i>	හීන් එරමිණියා	N	LC	1			1		1			1			
111	Rhamnaceae	<i>Ziziphus rugosa</i>	මහ එරමිණියා	N	NT				1		1		1				
112	Rubiaceae	<i>Canthium coromandelicum</i>	කර	N	LC	1					1		1				
113	Rubiaceae	<i>Cinchona officinalis</i>	සිංකෝනා	I	NE	1	1		1	1							
114	Rubiaceae	<i>Coffea arabica</i>	කෝපි	I	NE	1	1				1						
115	Rubiaceae	<i>Ixora coccinea</i>	රත්මල්, රතඹලා	N	LC	1											1
116	Rubiaceae	<i>Mussaenda frondosa</i>	මුස්සන්ද	N	LC								1				
117	Rubiaceae	<i>Ophiorrhiza mungos</i>	දත් කැටිය	N	LC	1	1		1	1	1				1		1
118	Rubiaceae	<i>Pavetta blanda</i>	පාවට්ටා	N	LC	1	1				1						
119	Rubiaceae	<i>Psydrax dicoccos</i> var. <i>dicoccos</i>	පණු කරව්	N	LC						1						
120	Rubiaceae	<i>Spermacoce latifolia</i>		I	NE								1	1		1	
121	Rubiaceae	<i>Spermacoce ocymifolia</i>		I	NE								1		1		
122	Rubiaceae	<i>Tarenna asiatica</i>	තරණ	N	LC								1				
123	Rutaceae	<i>Atalantia ceylanica</i>	යකිතාරං	N	LC								1				
124	Rutaceae	<i>Clausena indica</i>	මී ගොං කරපිංචා	N	LC						1		1				

	Family	Scientific Name	Common Name	DS	CS	P17	P18	P19	P27	P28	P29	P30	P31	P32	P33	P34	P35
125	Rutaceae	<i>Toddalia asiatica</i>	කුඩුමිරිස්ස	N	LC								1				
126	Sapindaceae	<i>Allophylus cobbe</i>	කොබ්බෑ	N	LC	1			1		1						
127	Sapotaceae	<i>Madhuca longifolia</i> var. <i>longifolia</i>	මී	N	LC				1								
128	Simaroubaceae	<i>Brucea javanica</i>	නින්ත කොහොඹ	N	LC						1		1				
129	Symplocaceae	<i>Symplocos acuminata</i>	බෝඹු	N	LC				1			1	1				1
130	Theaceae	<i>Camellia sinensis</i>	තේ	I	NE								1				
131	Verbenaceae	<i>Lantana camara</i>	ගදපාන	I	NE						1		1	1			
132	Verbenaceae	<i>Stachytarpheta jamaicensis</i>	බඳුනකුට	I	NE								1				1
133	Vitaceae	<i>Leea indica</i>	බුරුල්ල	N	LC	1					1		1				
134	Zingiberaceae	<i>Curcuma zedoaria</i>	හරන් කහ	I	NE										1		

Annex 2b. The list of animal species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **N** - Native, **I** – Introduced. **CS** - Conservation Status (National Conservation Status or * Global Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** – Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** – Vulnerable. **D##**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	P17	P18	P19	P27	P28	P29	P30	P31	P32	P33	P34	P35
Dragonflies																	
1	Calopterygidae	<i>Vestails nigrescens</i>	Black-tipped flashwing	N	LC*				1	1							
2	Euphaeidae	<i>Euphaea splendens</i>	Shining Gossamerwing	E	LC*				1								
3	Coenagrionidae	<i>Ceriagrion coromandelianum</i>	Yellow Waxtail	N	LC										1		
4	Platynemididae	<i>Copera marginipes</i>	Yellow Featherleg	N	LC										1		
5	Platynemididae	<i>Elatoneura centralis</i>	Dark-glittering Threadtail	E	LC*						1						
6	Platystictidae	<i>Ceylonosticta brincki</i>	Brinck's Shadowdamsel	E	LC*	1			1						1		
7	Platystictidae	<i>Ceylonosticta walli</i>	Wall's shadowdamsel	E	EN*				1	1	1						
8	Platystictidae	<i>Platysticta apicalis</i>	Dark Forestdamsel	E	NT*				1								
9	Gomphidae	<i>Paragomphus campestris</i>	Lowland Hooktail	E	LC*												1
10	Gomphidae	<i>Paragomphus henryi</i>	Brook Hooktail	E	NT*				1		1						
11	Gomphidae	<i>Gomphidia pearsoni</i>	Rivulet Tiger	E	VU*										1		
12	Libellulidae	<i>Orthetrum chrysis</i>	Spine-tufted Skimmer	N	VU										1		
13	Libellulidae	<i>Orthetrum glaucum</i>	Asian Skimmer	N	NT				1		1						
14	Libellulidae	<i>Orthetrum luzonicum</i>	Marsh Skimmer	N	NT						1						
15	Libellulidae	<i>Orthetrum pruinosum</i>	Pink Skimmer	N	NT									1			
16	Libellulidae	<i>Diplacodes trivialis</i>	Blue Percher	N	LC									1			
17	Libellulidae	<i>Neurothemis intermedia</i>	Paddyfield Parasol	N	NT		1					1	1			1	
18	Libellulidae	<i>Neurothemis tullia</i>	Pied Parasol	N	LC									1			
19	Libellulidae	<i>Trithemis festiva</i>	Indigo Dropwing	N	VU				1		1						

	Family	Scientific Name	Common Name	DS	CS	P17	P18	P19	P27	P28	P29	P30	P31	P32	P33	P34	P35
20	Libellulidae	<i>Pantala flavescens</i>	Wandering Glider	N	LC									1		1	
Butterflies																	
1	Papilionidae	<i>Troides darsius</i>	Sri Lankan Birdwing	E	LC				1				1				
2	Papilionidae	<i>Papilio crino</i>	Banded Peacock	N	VU								1				
3	Papilionidae	<i>Papilio demoleus</i>	Lime Butterfly	N	LC				1								
4	Papilionidae	<i>Papilio polytes</i>	Common Mormon	N	LC				1	1		1	1		1		
5	Papilionidae	<i>Papilio polymnestor</i>	Blue Mormon	N	LC				1				1				
6	Papilionidae	<i>Graphium teredon</i>	Narrow-banded Bluebottle	N	LC									1			
7	Pieridae	<i>Leptosia nina</i>	Psyche	N	LC											1	
8	Pieridae	<i>Delias eucharis</i>	Jezebel	N	LC								1				
9	Pieridae	<i>Appias galene</i>	Sri Lankan Lesser Albatross	E	LC								1	1			
10	Pieridae	<i>Catopsilia pomona</i>	Lemon Emigrant	N	LC						1						
11	Pieridae	<i>Catopsilia scylla</i>	Orange Migrant	I	LC				1								
12	Pieridae	<i>Eurema hecabe</i>	Common Grass Yellow	N	LC	2	1	1	1	1			1	1			
13	Nymphalidae	<i>Parantica aglea</i>	Glassy Tiger	N	LC				1			1	1				
14	Nymphalidae	<i>Euploea core</i>	Common Crow	N	LC							1					
15	Nymphalidae	<i>Junonia iphita</i>	Chocolate Soldier	N	LC				1				1				
16	Nymphalidae	<i>Neptis hylas</i>	Common Sailor	N	LC				1		1	1	1	1			
17	Nymphalidae	<i>Melanitis leda</i>	Common Evening Brown	N	LC								1				
18	Nymphalidae	<i>Melanitis phedima</i>	Dark Evening Brown	N	NT	1		1		1							
19	Nymphalidae	<i>Orsotriaena medus</i>	Medus Brown	N	LC	1		1		1						1	
20	Nymphalidae	<i>Mycalesis mineus</i>	Dark-Brand Bushbrown	N	LC	1		1									
21	Nymphalidae	<i>Mycalesis patnia</i>	Sri Lanka Gladeye Bushbrown	E	LC	1		1	1								
22	Nymphalidae	<i>Ypthima ceylonica</i>	White Four-ring	N	LC				1				1	1	1	1	1
23	Nymphalidae	<i>Elymnias hypermnestra</i>	Common Palmfly	N	LC	1				1						1	
24	Lycaenidae	<i>Loxura atymnus</i>	Yamfly	N	LC						1						
25	Lycaenidae	<i>Jamides celeno</i>	Common Cerulean	N	LC					1				1			

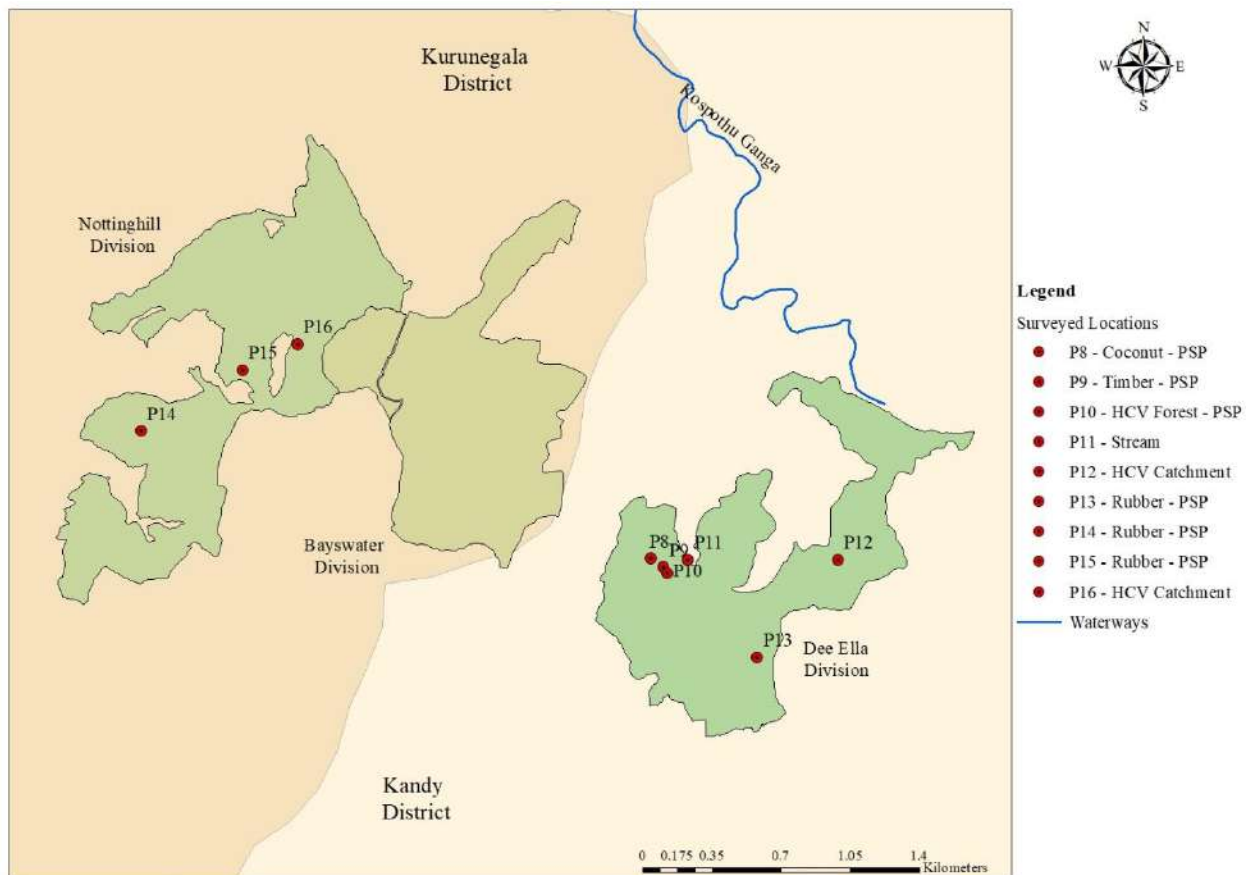
	Family	Scientific Name	Common Name	DS	CS	P17	P18	P19	P27	P28	P29	P30	P31	P32	P33	P34	P35
14	Alcedinidae	<i>Halcyon smyrnensis</i>	White-throated Kingfisher	N	LC											1	
15	Bucerotidae	<i>Ocyrceros gingalensis</i>	Sri Lanka Grey Hornbill	E	LC	1											
16	Ramphastidae	<i>Megalaima zeylanica</i>	Brown-headed Barbet	N	LC	1			1				1	1			1
17	Ramphastidae	<i>Megalaima rubricapillus</i>	Sri Lanka Barbet	E	LC	1	1	1	1	1	1	1	1	1		1	
18	Ramphastidae	<i>Megalaima flavifrons</i>	Sri Lanka Yellow-fronted Barbet	E	LC	1	1	1	1	2	1	1	1	1	1	1	1
19	Picidae	<i>Dinopium psarodes</i>	Lesser Sri Lanka Flameback	E	LC					1		1	1			1	
20	Picidae	<i>Chrysocolaptes stricklandi</i>	Greater Sri Lanka Flameback	E	LC	1				1							
21	Picidae	<i>Picus chlorolophus</i>	Lesser Yellownape	N	NT												1
22	Aegithinidae	<i>Aegithina tiphia</i>	Common Iora	N	LC					1		1	1				
23	Campephagidae	<i>Pericrocotus flammeus</i>	Scarlet Minivet	N	LC				2						1		
24	Campephagidae	<i>Pericrocotus cinnamomeus</i>	Small Minivet	N	LC							1					
25	Campephagidae	<i>Hemipus picatus</i>	Bar-winged Flycatcher-shrike	N	LC	1											
26	Campephagidae	<i>Coracina melanoptera</i>	Black-headed Cuckoo-shrike	N	LC								1	1			
27	Campephagidae	<i>Tephrodornis pondicerianus</i>	Sri Lanka Wood-shrike	E	LC			1						1	1		
28	Oriolidae	<i>Oriolus xanthornus</i>	Black-hooded Oriole	N	LC							1		1			
29	Dicruridae	<i>Dicrurus caeruleus</i>	White-bellied Drongo	N	LC				1					1	1		
30	Rhipiduridae	<i>Rhipidura aureola</i>	White-browed Fantail	N	LC				1								
31	Monarchiidae	<i>Terpsiphone paradisi</i>	Asian Paradise Flycatcher	N	LC				1								
32	Corvidae	<i>Corvus splendens</i>	House Crow	N	LC											1	1
33	Corvidae	<i>Corvus leucomelas</i>	Jungle Crow	N	LC												1
34	Hirundinidae	<i>Hirundo hypertyra</i>	Sri Lanka swallow	E	LC				1								
35	Cisticolidae	<i>Prinia hodgsonii</i>	Gray-breasted Prinia	N	LC				1								
36	Pycnonotidae	<i>Hypsipetes leucocephalus</i>	Asian Black Bulbul	N	LC							1	1	1			

Nottingham Estate

1. Introduction

Nottingham Estate is managed under the Pitiakanda Group of Lalan Rubbers Pvt. Ltd. It is located in Kurunegala and Kandy Districts and has a total extent of 383.45 ha. There are three divisions in the estate and the primary crops grown are coconut and rubber. The extent of conservation areas in the estates are 13.08 ha. The estate has a HCV Forest in the Dee Ella Division and several HCV sites important as catchment areas.

Nottingham estate has an intermediate climatic pattern. Ecologically the area is near the conjunction of three floristic zones, i.e., Kandy and Upper Mahaweli Floristic Zone, Northern Wet Lowland Floristic Zone and Northern Intermediate Floristic Zone. Kospothu Ganga, which is a tributary to the Deduru Oya River flows near the northeastern side of the estate.



Map of Nottingham Estate and the distribution of sampling sites (Table XX).

2. Methodological approach

2.1 Study locations: Altogether, 9 sampling sites were surveyed, 6 in Dee Ella Division, and 3 in Nottingham Division. These includes one HCV Forest site, PSPs in Rubber, Coconut and Khaya, two HCV catchment areas and a stream. A summary of locations sampled are given in Table 1 and the distribution of the sampling plots within the Nottingham estate is shown in Figure 1.

Table 1. The number of sites sampled within the Nottingham Estate

Division	Site	Site type	Site code	Latitude	Longitude	Ele. (m)
Dee Ella	Coconut C5	Coconut - PSP	P8	7.37742	80.47066	247
	Timber - Khaya	Timber - PSP	P9	7.37703	80.47122	253
	HCV Forest	Forest - PSP	P10	7.37677	80.47140	259
	Stream - C1, C2, C3	Stream	P11	7.37737	80.47234	245
	HCV Catchment	Catchment	P12	7.37737	80.47916	302
	Rubber R7 (1985)	Rubber - PSP	P13	7.37295	80.47549	306
Nottingham	Rubber R7 (2015)	Rubber - PSP	P14	7.38320	80.44753	253
	Rubber (2006)	Rubber - PSP	P15	7.38598	80.45212	225
	HCV Catchment 1988/1999	Catchment	P16	7.38715	80.45463	227

2.2 Study Period: This study was undertaken in June 2021 covering the dry season of the area.

2.3 Study techniques: Please refer Chapter 1

3. Key Findings of the Biodiversity Assessment

Based on the results of the assessments conducted in the Nottingham estate 122 species of plants and 104 species of animals were recorded. This included 18 species of endemic fauna, 5 species of endemic flora, 6 species of threatened fauna and 3 species of threatened flora. A summary of the species recorded under different taxonomic groups are presented in table 2. The detailed list of plants and animals observed during this study including their distribution and threat status is given in Annex 2a and 2b.

Table 2. Summary of the total fauna and flora recorded during the assessment.

Abbreviations used: **CR** - Critically Endangered; **EN** - Endangered; **VU** – Vulnerable, **NT** - Near Threatened, **DD** – Data Deficient.

Taxa	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Dragonflies	12	5	-	-	-	2	3	-
Butterflies	31	3	-	-	1	-	2	-
Freshwater Fish	5	0	-	-	-	-	1	-
Amphibians	0	0	-	-	-	-	-	-
Reptiles	7	3	-	-	1	-	-	-
Birds	43	7	-	-	-	-	1	-
Mammals	6	0	-	-	1	1	1	-
Sub-Total (Fauna)	104	18	0	0	3	3	8	0
Plants	122	5	32	0	0	3	6	1
Total (Species)	226	23	32	0	3	6	14	1

4. Important Findings of the Assessment

4.1. Critical Species

1. Opaque Six-Lineblue (*Nacaduba beroe*)

A threatened (Endangered) and an uncommon species usually distributed in the wet zone up to about 900 m elevation. It inhabits the canopy and sub-canopy of wet zone forests and other well vegetated areas. The species was reported in the Khaya field in Dee Ella Division and Rubber 2015 field in Nottingham Division.



Opaque Six-Lineblue. Image: TR

4.1. Critical Habitats

1. HCV Forest, Dee Ella Division

This secondary forest patch (Site P10) provides habitat for several endemic species of fauna and flora. As an important catchment area, it also contributes to the stream running below the forest, supporting an additional set of endemic and threatened species. Some endemic species observed in the area are the damselfly Brinck's Shadowdamsel, Sri Lanka Kangaroo Lizard, Grey Hornbill and the flowering plants *Artocarpus nobilis*, *Aporosa lanceolata* and *Tabernaemontana dichotoma*.



Dee Ella Division HCV Forest (Site P10)

5. Conclusions and Recommendations

Results of the present assessment indicates that the total species richness and the number of endemic and threatened species recorded remains equal or higher in most instances compared to previous survey done in 2016. It should be noted that some of the species recorded during the previous assessments have not been recorded during the present survey and number of new species including endemic and threatened species have been newly recorded during the present assessment. Therefore, based on this data it can be safely concluded that the species richness as well as number of critical species (endemic and threatened species) have not undergone a decline between the two assessments.

No Specific recommendations are given for this estate. Please refer the list of recommendations in the main report for general recommendations.

Annex 2a. The list of plant species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **I** - Introduced, **N** - Native. **CS** - Conservation Status (National Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** - Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** - Vulnerable. **D##**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	P8	P9	P10	P11	P12	P13	P14	P15	P16
1	Acanthaceae	<i>Asystasia variabilis</i>	ගද පුරුක්	N	LC	1			1	1		1		
2	Acanthaceae	<i>Nicotaba betonica</i>	සුදු පුරුක්	N	LC					1				
3	Annonaceae	<i>Huberantha korinti</i>	මීවැන්න, උල්කෝන්ද	N	LC		1	1						
4	Annonaceae	<i>Milium indica</i>	කැකිලි මැස්ස	N	LC		1	1						
5	Annonaceae	<i>Uvaria zeylanica</i>	පලංග, පලු කන්	N	LC			1			1			
6	Apocynaceae	<i>Alstonia macrophylla</i>	හවරි නූග	I	NE	1	1	1			1			
7	Apocynaceae	<i>Alstonia scholaris</i>	රුක් අත්තන	N	LC		1							
8	Apocynaceae	<i>Anodendron parviflorum</i>	දුල්, ගැරඩි දුල්	N	VU		1					1		
9	Apocynaceae	<i>Ichnocarpus frutescens</i>	කිරි වැල්	N	LC		1					1		
10	Apocynaceae	<i>Tabernaemontana dichotoma</i>	දිවි කදුරු	E	LC			1			1			
11	Apocynaceae	<i>Hemidesmus indicus</i>	හීන් ඉරමුසු, ඉරමුසු	N	LC		1							
12	Araceae	<i>Colocasia esculenta</i>	ගහල	N	LC				1	1				1
13	Araceae	<i>Lasia spinosa</i>	කොහිල	N	LC					1				
14	Araceae	<i>Pothos scandens</i>	පෝචා වැල්	N	LC		1	1			1			
15	Araceae	<i>Syngonium angustatum</i>	වැල් කොහිල	I	NE								1	
16	Arecaceae	<i>Caryota urens</i>	කිතුල්	N	LC		1	1			1		1	
17	Aristolochiaceae	<i>Thottea siliquosa</i>	තාපසර බුලන්	N	LC			1						
18	Asparagaceae	<i>Asparagus falcatus</i>	හානවාරිය	N	LC						1			
19	Asteraceae	<i>Ageratum conyzoides</i>	හුලන්තලා	I	NE				1	1				
20	Asteraceae	<i>Austroeupatorium inulifolium</i>		I	NE			1						
21	Asteraceae	<i>Chromolaena odorata</i>	පොඩි සිඤ්ඤාමරන්	I	NE	1	1		1	1		1		

	Family	Scientific Name	Common Name	DS	CS	P8	P9	P10	P11	P12	P13	P14	P15	P16
22	Asteraceae	<i>Crassocephalum crepidioides</i>		I	NE							1		
23	Asteraceae	<i>Cyanthillium cinereum</i>	මොණරකුඩුමිබිය	N	LC	1						1		
24	Asteraceae	<i>Eleutheranthera ruderalis</i>		I	NE						1			
25	Asteraceae	<i>Emilia sonchifolia</i>	කඩුපහර	N	LC	1								
26	Asteraceae	<i>Mikania cordata</i>	වතු පාළු	I	NE	1	1				1	1		
27	Asteraceae	<i>Sphagneticola trilobata</i>	උදය කුමාර්	I	NE				1	1				
28	Calophyllaceae	<i>Calophyllum inophyllum</i>	දොඹ	N	LC		1				1			
29	Cannabaceae	<i>Celtis timorensis</i>	ගුරුන්ද, ගුරුන්ද	N	LC						1			
30	Combretaceae	<i>Combretum ovalifolium</i>	කදුරු කැටිය වැල්	N	NT			1						
31	Commelinaceae	<i>Commelina diffusa</i>	ගිරා පළා, තණ පළා	N	LC	1					1	1		
32	Connaraceae	<i>Rourea minor</i>	ගොඩ කිරිදි, කිරිදි වැල්	N	LC		1	1			1			
33	Convolvulaceae	<i>Xenostegia tridentata</i>	හවරි මදු, හීන් මදු	N	LC	1								
34	Costaceae	<i>Hellenia speciosa</i>	තෙඹු	N	LC									1
35	Dilleniaceae	<i>Tetracera sarmentosa</i>	කොරොස වැල්	N	LC						1			
36	Elaeocarpaceae	<i>Elaeocarpus serratus</i>	වෙරළ	N	LC			1						
37	Euphorbiaceae	<i>Croton hirtus</i>	ගං වෙද	I	NE	1								
38	Euphorbiaceae	<i>Hevea brasiliensis</i>	රබර්	I	NE		1	1			1			
39	Euphorbiaceae	<i>Macaranga peltata</i>	කැන්ද	N	LC	1		1			1	1	1	
40	Euphorbiaceae	<i>Mallotus philippensis</i>	හම්පිල්ල	N	LC						1			
41	Euphorbiaceae	<i>Mallotus rhamnifolius</i>	මෝල් ඇවේ	N	LC			1						
42	Fabaceae	<i>Abrus precatorius</i>	ඔළිද	N	LC		1							
43	Fabaceae	<i>Adenantha pavonina</i>	මදටිය, මංවාචි	N	LC						1			
44	Fabaceae	<i>Albizia lebeck</i>	මාර, සුරිය මාර, විෂ නෂ්ණ	N	NT						1			
45	Fabaceae	<i>Centrosema pubescens</i>		I	NE	1								
46	Fabaceae	<i>Gliricidia sepium</i>	වැටමාර	I	NE		1							

	Family	Scientific Name	Common Name	DS	CS	P8	P9	P10	P11	P12	P13	P14	P15	P16
47	Fabaceae	<i>Grona heterocarpa</i>	අත් උදුපියලිය	N	VU							1	1	
48	Fabaceae	<i>Grona heterophylla</i>	මහ උදුපියලිය	N	LC	1	1				1	1	1	
49	Fabaceae	<i>Grona triflora</i>	හීන් උදුපියලිය	N	LC	1	1				1			
50	Fabaceae	<i>Mimosa pudica</i>	නිදිකුම්බා	I	NE	1						1		
51	Fabaceae	<i>Neustanthus phaseoloides</i>	පෝර වැල්	I	NE	1	1				1	1	1	1
52	Fabaceae	<i>Senegalia caesia</i>	හිඹුරු	N	LC							1		
53	Fabaceae	<i>Tamarindus indica</i>	සියඹලා	I	NE						1			
54	Hypoxidaceae	<i>Curculigo orchoides</i>	බිම් තල්	N	LC						1		1	
55	Lamiaceae	<i>Hyptis capitata</i>		I	NE					1		1		
56	Lamiaceae	<i>Vitex altissima</i>	මිල්ල	N	NT	1		1			1			
57	Lauraceae	<i>Cinnamomum verum</i>	කුරුඳු, පත් කුරුඳු	E	VU		1							
58	Lauraceae	<i>Litsea glutinosa</i>	බෝම්බි, බෝම්	N	LC	1	1				1	1	1	
59	Lauraceae	<i>Neolitsea cassia</i> var. <i>cassia</i>	දවුල් කුරුඳු	N	LC		1	1					1	
60	Lecythidaceae	<i>Careya arborea</i>	කහට	N	LC		1							
61	Malpighiaceae	<i>Hiptage benghalensis</i>	පුවක් ගෙඩිය වැල්	N	LC	1		1						
62	Malvaceae	<i>Hibiscus surattensis</i>	හීන් නාපිරින්න	N	LC		1					1		
63	Malvaceae	<i>Sida rhombifolia</i> subsp. <i>rhombifolia</i>	කොටිකන් බැබිල	N	LC							1		
64	Malvaceae	<i>Urena lobata</i>	පට්ට ඇපල	N	LC	1						1	1	
65	Malvaceae	<i>Urena lobata</i> subsp. <i>sinuata</i>	හීන් ඇපල	N	LC	1						1		
66	Malvaceae	<i>Bombax ceiba</i>	කටු ඉඹුල්	N	LC						1			
67	Malvaceae	<i>Grewia orientalis</i>	වැල් කැලිය	N	LC			1						
68	Malvaceae	<i>Microcos paniculata</i>	කොහු කිරිල්ල	N	LC	1	1	1						
69	Malvaceae	<i>Pterospermum suberifolium</i>	වෙලන්	N	LC		1							
70	Melastomataceae	<i>Memecylon umbellatum</i>	කොර කහ	N	LC	1					1			
71	Melastomataceae	<i>Miconia crenata</i>	කටකළු බෝවිටියා	I	NE		1	1	1	1	1			
72	Melastomataceae	<i>Osbeckia octandra</i>	හීන් බෝවිටියා	E	LC			1						

	Family	Scientific Name	Common Name	DS	CS	P8	P9	P10	P11	P12	P13	P14	P15	P16
100	Rhamnaceae	<i>Ziziphus oenopolia</i>	හීන් එරමිණියා	N	LC	1		1		1		1		
101	Rhamnaceae	<i>Ziziphus rugosa</i>	මහ එරමිණියා	N	NT						1			
102	Rhizophoraceae	<i>Carallia brachiata</i>	දවට	N	LC			1			1			
103	Rubiaceae	<i>Coffea arabica</i>	කෝපි	I	NE	1								
104	Rubiaceae	<i>Gynochthodes umbellata</i>	කිරි වැල්	N	LC		1							
105	Rubiaceae	<i>Ixora coccinea</i>	රන්මල්, රතඹලා	N	LC						1			
106	Rubiaceae	<i>Mussaenda frondosa</i>	මුස්සන්ද	N	LC					1				
107	Rubiaceae	<i>Ophiorrhiza mungos</i>	දන් කැටිය	N	LC						1			
108	Rubiaceae	<i>Spermacoce articularis</i>		N	LC					1				
109	Rubiaceae	<i>Spermacoce latifolia</i>		I	NE	1						1		
110	Rubiaceae	<i>Spermacoce ocymifolia</i>		I	NE	1	1					1	1	
111	Rubiaceae	<i>Tarenna asiatica</i>	තරණ	N	LC			1						
112	Rutaceae	<i>Acronychia pedunculata</i>	අන්කෙන්ද	N	LC						1			
113	Rutaceae	<i>Atalantia ceylanica</i>	යකිතාරං	N	LC		1				1			
114	Rutaceae	<i>Clausena indica</i>	මී ගොං කරපිංචා	N	LC		1	1			1			
115	Rutaceae	<i>Toddalia asiatica</i>	කුඩුමිරිස්ස	N	LC	1	1	1			1			
116	Simaroubaceae	<i>Brucea javanica</i>	නින්ත කොහොඹ	N	LC		1	1						
117	Smilacaceae	<i>Smilax perfoliata</i>	මහ කබරස	N	LC		1	1						
118	Smilacaceae	<i>Smilax zeylanica</i>	හීන් කබරස	N	NT						1			
119	Symplocaceae	<i>Symplocos acuminata</i>	බෝඹු	N	LC	1	1	1	1	1			1	
120	Thymelaeaceae	<i>Wikstroemia indica</i>		I	NE	1	1				1	1		
121	Verbenaceae	<i>Lantana camara</i>	ගඳපාන	I	NE	1	1							
122	Verbenaceae	<i>Stachytarpheta jamaicensis</i>	බලුනකුට	I	NE				1	1				

Annex 2b. The list of animal species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **N** - Native, **I** – Introduced, **M** - Migrant. **CS** - Conservation Status (National Conservation Status or * Global Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** – Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** – Vulnerable. **D##**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	P8	P9	P10	P11	P12	P13	P14	P15	P16
Dragonflies														
1	Calopterygidae	<i>Vestails nigrescens</i>	Black-tipped flashwing	N	LC*									1
2	Euphaeidae	<i>Euphaea splendens</i>	Shining Gossamerwing	E	LC*				1					
3	Platycnemididae	<i>Copera marginipes</i>	Yellow Featherleg	N	LC					1				
4	Platycnemididae	<i>Elatoneura centralis</i>	Dark-glittering Threadtail	E	LC*				1					1
5	Platystictidae	<i>Ceylonosticta brincki</i>	Brinck's Shadowdamsel	E	LC*			1						
6	Gomphidae	<i>Megalogomphus ceylonicus</i>	Sri Lanka Sabretail	E	VU*				1					
7	Libellulidae	<i>Tetrathemis yerburii</i>	Yerbury's Elf	E	VU*					1				
8	Libellulidae	<i>Orthetrum luzonicum</i>	Marsh Skimmer	N	NT					1				
9	Libellulidae	<i>Orthetrum pruinosum</i>	Pink Skimmer	N	NT					1				
10	Libellulidae	<i>Neurothemis intermedia</i>	Paddyfield Parasol	N	NT							1		
11	Libellulidae	<i>Neurothemis tullia</i>	Pied Parasol	N	LC					1				
12	Libellulidae	<i>Pantala flavescens</i>	Wandering Glider	N	LC							1		
Butterflies														
1	Papilionidae	<i>Troides darsius</i>	Sri Lankan Birdwing	E	LC		1							
2	Papilionidae	<i>Pachliopta aristolochiae</i>	Common Rose	N	LC	1								
3	Papilionidae	<i>Papilio polymnestor</i>	Blue Mormon	N	LC			1			1	1	1	
4	Papilionidae	<i>Graphium teredon</i>	Narrow-banded Bluebottle	N	LC						1	1		

	Family	Scientific Name	Common Name	DS	CS	P8	P9	P10	P11	P12	P13	P14	P15	P16
5	Papilionidae	<i>Graphium agamemnon</i>	Tailed Jay	N	LC					1	1	1		
6	Pieridae	<i>Leptosia nina</i>	Psyche	N	LC	1						1		
7	Pieridae	<i>Appias galene</i>	Sri Lankan Lesser Albatross	E	LC			1			1		1	
8	Pieridae	<i>Catopsilia pomona</i>	Lemon Emigrant	N	LC					1		1		
9	Pieridae	<i>Eurema blanda</i>	Three-Spot Grass Yellow	N	LC					1				
10	Nymphalidae	<i>Parantica aglea</i>	Glassy Tiger	N	LC						1			
11	Nymphalidae	<i>Danaus genutia</i>	Common Tiger	N	LC						1			
12	Nymphalidae	<i>Euploea core</i>	Common Crow	N	LC	1				1	1			
13	Nymphalidae	<i>Hypolimnas bolina</i>	Great Eggfly	N	LC							1		
14	Nymphalidae	<i>Hypolimnas misippus</i>	Danaid Eggfly	N	LC							1		
15	Nymphalidae	<i>Junonia atlites</i>	Grey Pansy	N	LC						1			
16	Nymphalidae	<i>Junonia iphita</i>	Chocolate Soldier	N	LC	1		1		1	1	1	1	1
17	Nymphalidae	<i>Neptis hylas</i>	Common Sailor	N	LC	1	1		1		1	1	1	
18	Nymphalidae	<i>Parthenos sylvia</i>	Clipper	N	LC	1		1	1					
19	Nymphalidae	<i>Charaxes psaphon</i>	Tawny Rajah	N	NT				1					
20	Nymphalidae	<i>Melanitis leda</i>	Common Evening Brown	N	LC						1			
21	Nymphalidae	<i>Orsotriaena medus</i>	Medus Brown	N	LC		1				1			
22	Nymphalidae	<i>Mycalesis perseus</i>	Common Bushbrown	N	LC					1				
23	Nymphalidae	<i>Mycalesis patnia</i>	Sri Lanka Gladeye Bushbrown	E	LC						1	1		
24	Nymphalidae	<i>Ypthima ceylonica</i>	White Four-ring	N	LC	1				1				
25	Nymphalidae	<i>Elymnias hypermnestra</i>	Common Palmfly	N	LC	1				1	1			1
26	Lycaenidae	<i>Spalgis epeus</i>	Apefly	N	LC							1		
27	Lycaenidae	<i>Nacaduba beroe</i>	Opaque Six Lineblue	N	EN		1					1		
28	Lycaenidae	<i>Jamides bochus</i>	Dark Cerulean	N	LC						1	1		
29	Lycaenidae	<i>Jamides celeno</i>	Common Cerulean	N	LC							1		
30	Hesperiidae	<i>Iambrix salsala</i>	Chestnut Bob	N	LC					1	1	1		
31	Hesperiidae	<i>Pelopidas agna</i>	Little Branded Swift	N	NT	1			1	1		1	1	1

	Family	Scientific Name	Common Name	DS	CS	P8	P9	P10	P11	P12	P13	P14	P15	P16
11	Alcedinidae	<i>Halcyon smyrnensis</i>	White-throated Kingfisher	N	LC	1				1				
12	Bucerotidae	<i>Ocyrceros gingalensis</i>	Sri Lanka Grey Hornbill	E	LC		1	1						
13	Ramphastidae	<i>Megalaima zeylanica</i>	Brown-headed Barbet	N	LC	1	1	1			1	1	1	1
14	Ramphastidae	<i>Megalaima rubricapillus</i>	Sri Lanka Barbet	E	LC	1	1				1	1	1	
15	Picidae	<i>Dinopium psarodes</i>	Lesser Sri Lanka Flameback	E	LC	1	1	1			1	1		1
16	Picidae	<i>Dendrocopos nanus</i>	Brown-capped Woodpecker	N	LC		1						1	
17	Campephagidae	<i>Pericrocotus flammeus</i>	Scarlet Minivet	N	LC								1	
18	Campephagidae	<i>Pericrocotus cinnamomeus</i>	Small Minivet	N	LC		1						1	
19	Campephagidae	<i>Hemipus picatus</i>	Bar-winged Flycatcher-shrike	N	LC		1							1
20	Campephagidae	<i>Coracina macei</i>	Large Cuckooshrike	N	LC						1			
21	Campephagidae	<i>Coracina melanoptera</i>	Black-headed Cuckoo-shrike	N	LC		1							
22	Campephagidae	<i>Tephrodornis pondicerianus</i>	Sri Lanka Wood-shrike	E	LC		1				1		1	
23	Oriolidae	<i>Oriolus xanthornus</i>	Black-hooded Oriole	N	LC	1	1	1						
24	Dicruridae	<i>Dicrurus caerulescens</i>	White-bellied Drongo	N	LC	1	1				1		1	1
25	Rhipiduridae	<i>Rhipidura aureola</i>	White-browed Fantail	N	LC								1	1
26	Monarchiidae	<i>Hypothymis azurea</i>	Black-naped Monarch	N	LC		1						1	
27	Corvidae	<i>Corvus splendens</i>	House Crow	N	LC							1		
28	Hirundinidae	<i>Hirundo hyperythra</i>	Sri Lanka swallow	E	LC							1		1
29	Cisticolidae	<i>Prinia hodgsonii</i>	Gray-breasted Prinia	N	LC	1								
30	Pycnonotidae	<i>Pycnonotus melanicterus</i>	Black-crested Bulbul	E	LC		1							
31	Pycnonotidae	<i>Pycnonotus cafer</i>	Red-vented Bulbul	N	LC	1	1			1				
32	Pycnonotidae	<i>Iole indica</i>	Yellow-browed Bulbul	N	LC		1		1		1			
33	Sylviidae	<i>Orthotomus sutorius</i>	Common Tailorbird	N	LC								1	1
34	Timaliidae	<i>Turdoides affinis</i>	Yellow-billed Babbler	N	LC	1								
35	Zosteropidae	<i>Zosterops palpebrosus</i>	Oriental White Eye	N	LC		1							1
36	Sturnidae	<i>Gracula religiosa</i>	Hill Myna	N	LC		1	1	1	1				

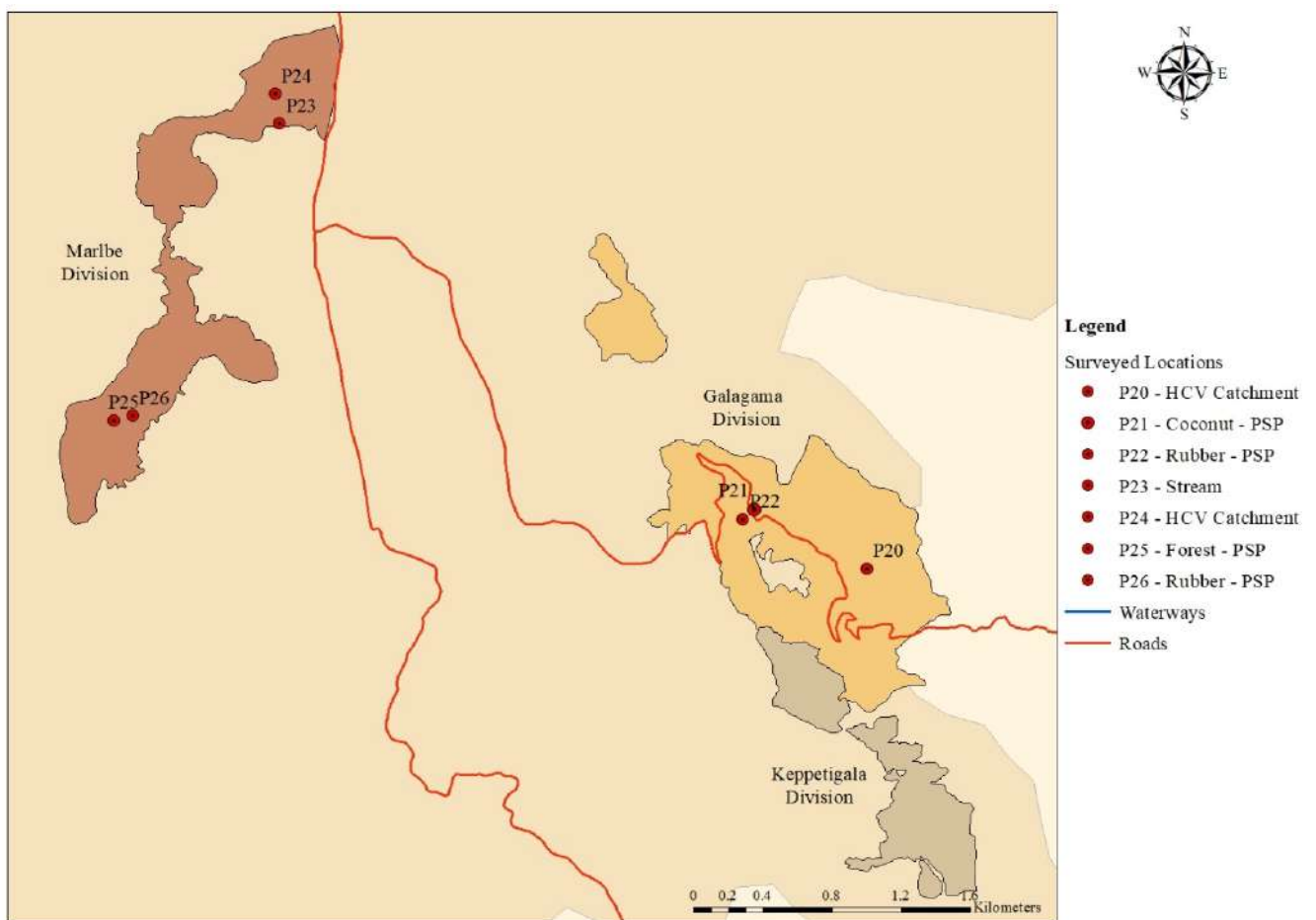
	Family	Scientific Name	Common Name	DS	CS	P8	P9	P10	P11	P12	P13	P14	P15	P16
37	Muscicapidae	<i>Cyornis tickelliae</i>	Tickell's Blue Flycatcher	N	LC			1		1			1	
38	Chloropseidae	<i>Chloropsis aurifrons</i>	Golden Fronted Leafbird	N	LC	1	1							
39	Chloropseidae	<i>Chloropsis jerdoni</i>	Jerdon's Leafbird	N	LC						1			
40	Dicaeidae	<i>Dicaeum erythrorhynchos</i>	Pale-billed Flowerpecker	N	LC						1	1		
41	Nectariniidae	<i>Nectarinia zeylonica</i>	Purple-rumped Sunbird	N	LC	1			1	1	1	1		
42	Estrildidae	<i>Lonchura punctulata</i>	Scaly-breasted Munia	N	LC	1				1				
43	Estrildidae	<i>Lonchura striata</i>	White-rumped Munia	N	LC									1
Mammals														
1	Manidae	<i>Manis crassicaudata</i>	Pangolin	N	NT		1							
2	Suidae	<i>Sus scrofa</i>	Wild boar	N	LC	1	1	1						
3	Hystriidae	<i>Hystrix indica</i>	Porcupine	N	LC	1	1		1					
4	Sciuridae	<i>Funambulus palmarum</i>	Palm squirrel	N	LC		1				1			1
5	Mustelidae	<i>Lutra lutra</i>	Otter	N	VU				1					
6	Felidae	<i>Prionailurus viverrinus</i>	Fishing cat	N	EN				1					

Kappetigala Estate

1. Introduction

Kappetigala Estate is managed under the Pitiakanda Group of Lalan Rubbers Pvt. Ltd. It is located in the Kurunegala District and has a total extent of 317.63 ha. There are three divisions in the estate and the primary crops grown are coconut and rubber. The extent of conservation areas in the estates are 50.09 ha. The estate has a considerably large conservation forest in the Marlbe Division and several other HCV sites important as catchment areas.

Kappetigala estate has an intermediate climatic pattern. Ecologically the area is near the conjunction of three floristic zones, i.e., Kandy and Upper Mahaweli Floristic Zone, Northern Wet Lowland Floristic Zone and Northern Intermediate Floristic Zone. The estate is located in the Deduru Oya basin.



Map of Kappetigala Estate and the distribution of sampling sites (Table XX).

2. Methodological approach

2.1 Study locations: Altogether, 7 sampling sites were surveyed, 4 in Marlbe Division and 3 in Galagama Division. These includes one Conservation Forest site, PSPs in Rubber and Coconut, a HCV catchment area and a stream. A summary of locations sampled are given in Table 1 and the distribution of the sampling plots within the Kappetigala estate is shown in Figure 1.

Table 1. The number of sites sampled within the Kappetigala Estate

Division	Site	Site type	Site code	Latitude	Longitude	Ele. (m)
Galagama	HCV Catchment 2014	Catchment	P20	7.43779	80.54642	385
	Coconut 1994	Coconut - PSP	P21	7.44087	80.54055	367
	Rubber 1989	Rubber - PSP	P22	7.44035	80.53996	341
Marlbe	Stream R 34	Stream	P23	7.46094	80.51584	256
	HCV Catchment 2011	Catchment	P24	7.46248	80.51562	298
	Conservation Forest	Forest - PSP	P25	7.44549	80.50720	284
	Rubber 2003	Rubber - PSP	P26	7.44574	80.50820	262

2.2 Study Period: This study was undertaken in June 2021 covering the dry season of the area.

2.3 Study techniques: Please refer Chapter 1

3. Key Findings of the Biodiversity Assessment

Based on the results of the assessments conducted in the Kappetigala estate 121 species of plants and 106 species of animals were recorded. This included 24 species of endemic fauna, 7 species of endemic flora, 6 species of threatened fauna and 8 species of threatened flora. A summary of the species recorded under different taxonomic groups are presented in table 2. The detailed list of plants and animals observed during this study including their distribution and threat status is given in Annex 2a and 2b.

Table 2. Summary of the total fauna and flora recorded during the assessment.

Abbreviations used: CR - Critically Endangered; EN - Endangered; VU – Vulnerable, NT - Near Threatened, DD – Data Deficient.

Taxa	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Dragonflies	10	5	-	-	1	2	2	-
Butterflies	36	3	-	-	-	-	2	-
Freshwater Fish	2	1	-	-	-	-	2	-
Amphibians	5	2	-	-	-	1	1	-
Reptiles	6	4	-	-	-	-	-	1
Birds	37	8	-	-	-	-	3	-
Mammals	10	1	-	-	-	2	2	-
Sub-Total (Fauna)	106	24	0	0	1	5	12	1
Plants	121	7	35	-	2	6	3	2
Total (Species)	227	31	35	0	3	11	15	3

4. Important Findings of the Assessment

4.1. Critical Species

1. *Rhynchoglossum notonianum* (දියනිල්ල)

An erect, branching herbs, sometimes reduced to a single leaf. It grows up to about 10-80 cm in height. Found in moist montane forests of the hill country where it usually grows along streams and forest paths. This native herb is considered a nationally threatened (Endangered) species. It was observed at the 2014 HCV catchment area (Site P20) in Galagama Division.



Rhynchoglossum notonianum. Image: NC

2. Biophytum intermedium

This native species is an erect undershrub growing up to about one feet tall. It grows in wet lowlands and lower montane zones and flowering occurs mainly during December-February. This nationally Endangered species was reported at the 2014 HCV catchment in Galagama Division (Site P20).



Biophytum intermedium. Image: HJ

4.1. Critical Habitats

1. HCV Catchment in 2014 Rubber field in Galagama Division

This catchment area and the stream (Site P20) provides a critical habitat for several species of fauna and flora including some lower montane species. The rare and threatened dragonflies Wall's Shadow damsel, Fiery Emperor and the Near Threatened Wall's Grappletail; Endangered plant species *Rhynchoglossum notonianum* and *Biophytum intermedium* were reported at this site.



HCV catchment in Rubber 2014 field, Galagama Division

5. Conclusions and Recommendations

Results of the present assessment indicates that the total species richness and the number of endemic and threatened species recorded remains equal or higher in most instances compared to previous survey done in 2016. It should be noted that some of the species recorded during the previous assessments have not been recorded during the present survey and number of new species including endemic and threatened species have been newly recorded during the present assessment. Therefore, based on this data it can be safely concluded that the species richness as well as number of critical species (endemic and threatened species) have not undergone a decline between the two assessments.

Based on the findings of this assessment and the field observations the following set of recommendations can be made.

1. The lower montane streams and catchment areas in the estate such as the HCV catchment in Rubber 2014 field in Galagama division, provides an important habitat for the local biodiversity, especially species associated with aquatic habitats. Conservation measures such as control of invasive species and aquatic pollution, habitat enrichment with suitable native species, can further enhance biodiversity in the landscape.
2. Please refer the list of recommendations in the main report for additional recommendations.

Annex 2a. The list of plant species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **I** - Introduced, **N** - Native. **CS** - Conservation Status (National Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** - Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** - Vulnerable. **D##**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	P20	P21	P22	P23	P24	P25	P26
1	Acanthaceae	<i>Ecbolium ligustrinum</i>	කවු තුඹ, එක්වැරණිය	N	LC							1
2	Acanthaceae	<i>Ruellia prostrata</i>	නිල් පුරක්	N	LC			1				1
3	Acanthaceae	<i>Thunbergia grandiflora</i>		I	NE			1				
4	Achariaceae	<i>Hydnocarpus venenatus</i>	මකුල්ල	E	LC							1
5	Annonaceae	<i>Annona muricata</i>	කටු අනෝදා	I	NE			1				
6	Annonaceae	<i>Miliusa indica</i>	කැකිලි මැස්ස	N	LC						1	
7	Annonaceae	<i>Polyalthia suberosa</i>	කලට්ටි	N	VU					1	1	
8	Apocynaceae	<i>Alstonia macrophylla</i>	හවර් තුග	I	NE	1					1	
9	Apocynaceae	<i>Alstonia scholaris</i>	රක් අත්තන	N	LC	1					1	1
10	Apocynaceae	<i>Ichnocarpus frutescens</i>	කිරි වැල්	N	LC							1
11	Apocynaceae	<i>Tabernaemontana dichotoma</i>	දිව් කපුරු	E	LC						1	
12	Apocynaceae	<i>Wrightia angustifolia</i>	මා ඉද්ද	E	LC		1					
13	Apocynaceae	<i>Cryptolepis dubia</i>	වැල් රක් අත්තන, කිරි වැල්	N	VU		1					
14	Apocynaceae	<i>Wattakaka volubilis</i>	අඟුණ	N	LC		1					
15	Araceae	<i>Colocasia esculenta</i>	ගහල	N	LC	1						
16	Araceae	<i>Pothos scandens</i>	පෝචා වැල්	N	LC	1						1
17	Arecaceae	<i>Caryota urens</i>	කිතුල්	N	LC	1		1	1		1	
18	Asparagaceae	<i>Dracaena zeylanica</i>	නියද	N	NT			1				
19	Asteraceae	<i>Chromolaena odorata</i>	පොඩි සිඤ්ඤොමරන්	I	NE	1	1	1		1		
20	Asteraceae	<i>Cyanthillium cinereum</i>	මොණරකුඩුමිටිය	N	LC		1	1				
21	Asteraceae	<i>Mikania cordata</i>	වතු පාලි	I	NE	1						

	Family	Scientific Name	Common Name	DS	CS	P20	P21	P22	P23	P24	P25	P26
22	Bignoniaceae	<i>Oroxylum indicum</i>	තොට්ල	N	LC						1	
23	Bignoniaceae	<i>Spathodea campanulata</i>	කුඩාලේල ගස්	I	NE		1					
24	Cannabaceae	<i>Celtis philippensis</i>	මැදිතැලේල	N	LC	1					1	
25	Cannabaceae	<i>Celtis timorensis</i>	ගුරුන්ද, ගුරුන්ද	N	LC							1
26	Cannabaceae	<i>Trema orientale</i>	ගැඹුඹ	N	LC	1				1		1
27	Cleomaceae	<i>Cleome rutidosperma</i>		N	LC			1				
28	Colchicaceae	<i>Gloriosa superba</i>	නියඟලා	N	LC					1		1
29	Commelinaceae	<i>Commelina clavata</i>	ගිරා පළා	N	VU							1
30	Commelinaceae	<i>Commelina diffusa</i>	ගිරා පළා, තණ පළා	N	LC	1		1				
31	Convolvulaceae	<i>Argyreia kleiniana</i>	ගිරිනිල්ල	N	LC	1	1	1		1		
32	Convolvulaceae	<i>Camonea pilosa</i>	කිරි මදු, මහ මදු	N	LC		1					
33	Crassulaceae	<i>Kalanchoe pinnata</i>	අක්කපාන	I	NE							1
34	Euphorbiaceae	<i>Croton aromaticus</i>	වැල් කැප්පෙටියා	N	LC	1						
35	Euphorbiaceae	<i>Jatropha curcas</i>	රට එඬරු, වැට එඬරු	I	NE					1		
36	Euphorbiaceae	<i>Macaranga peltata</i>	කැන්ද	N	LC	1		1	1		1	1
37	Euphorbiaceae	<i>Mallotus philippensis</i>	හම්පිල්ල	N	LC					1	1	
38	Euphorbiaceae	<i>Mallotus repandus</i>	වැල් කැප්පෙටියා	N	LC						1	
39	Euphorbiaceae	<i>Mallotus rhamnifolius</i>	මෝල් ඇබේ	N	LC				1			1
40	Euphorbiaceae	<i>Mallotus tetracoccus</i>	බු කැන්ද	N	LC	1						1
41	Euphorbiaceae	<i>Manihot carthagenensis</i> subsp. <i>glaziovii</i>	ගස් මඤ්ඤොක්කා	I	NE	1						
42	Fabaceae	<i>Adenanthera pavonina</i>	මදුවිය, මංවාඩි	N	LC	1						1
43	Fabaceae	<i>Centrosema pubescens</i>		I	NE			1		1		
44	Fabaceae	<i>Grona heterophylla</i>	මහ උදුපියලිය	N	LC			1				
45	Fabaceae	<i>Grona triflora</i>	හීන් උදුපියලිය	N	LC		1	1				
46	Fabaceae	<i>Humboldtia laurifolia</i>	ගල් කරද	E	LC							1
47	Fabaceae	<i>Mimosa pudica</i>	නිදිකුම්බා	I	NE		1	1				
48	Fabaceae	<i>Mucuna bracteata</i>	මුකුණ	I	NE	1						

	Family	Scientific Name	Common Name	DS	CS	P20	P21	P22	P23	P24	P25	P26
49	Fabaceae	<i>Neustanthus phaseoloides</i>	පෝර වැල්	I	NE							1
50	Fabaceae	<i>Samanea saman</i>	පිනි මාර	I	NE						1	1
51	Fabaceae	<i>Senegalia caesia</i>	හීගුරු	N	LC		1				1	
52	Fabaceae	<i>Senna hirsuta</i>		I	NE	1						
53	Fabaceae	<i>Senna occidentalis</i>	පැණි තෝර, හිවල් තෝර	I	NE		1					
54	Fabaceae	<i>Senna spectabilis</i>	කහ කෝන	I	NE	1		1				
55	Gesneriaceae	<i>Rhynchoglossum notonianum</i>	දිය නිල්ල	N	EN	1						
56	Hypoxidaceae	<i>Curculigo orchioides</i>	බිම් නල්	N	LC			1			1	1
57	Lamiaceae	<i>Clerodendrum infortunatum</i>	ගස් පින්න, පින්න	N	LC				1	1		1
58	Lamiaceae	<i>Hyptis capitata</i>		I	NE	1	1					
59	Lamiaceae	<i>Ocimum americanum</i>	හීන් තලා	N	LC	1	1					
60	Lamiaceae	<i>Rothea serrata</i>	කන් හන්ද	N	LC	1						
61	Lamiaceae	<i>Salvia misella</i>		I	NE			1				
62	Lamiaceae	<i>Tectona grandis</i>	තෝක්ක	I	NE		1					
63	Lauraceae	<i>Cinnamomum verum</i>	කුරුඳු, පත් කුරුඳු	E	VU						1	1
64	Lauraceae	<i>Litsea glutinosa</i>	බෝම්බි, බෝම්	N	LC	1				1	1	
65	Lauraceae	<i>Litsea longifolia</i>	රන් කැලිය	E	DD							1
66	Lauraceae	<i>Neolitsea cassia</i> var. <i>cassia</i>	දවුල් කුරුඳු	N	LC	1					1	1
67	Malpighiaceae	<i>Hiptage benghalensis</i>	පුවක් ගෙඩිය වැල්	N	LC						1	
68	Malvaceae	<i>Hibiscus surattensis</i>	හීන් තාපිරින්න	N	LC	1				1		
69	Malvaceae	<i>Sida cordata</i>	බැබිල, වැල් බැබිල	N	LC			1				
70	Malvaceae	<i>Sida rhombifolia</i> subsp. <i>rhombifolia</i>	කොටිකන් බැබිල	N	LC		1					
71	Malvaceae	<i>Urena lobata</i>	පට්ට ඇපල	N	LC	1	1	1			1	

	Family	Scientific Name	Common Name	DS	CS	P20	P21	P22	P23	P24	P25	P26
72	Malvaceae	<i>Urena lobata</i> subsp. <i>sinuata</i>	හීන් ඇපල	N	LC		1					
73	Malvaceae	<i>Berrya cordifolia</i>	හල්මිල්ල	N	LC		1					
74	Malvaceae	<i>Bombax ceiba</i>	කටු ඉඹුල්	N	LC						1	
75	Malvaceae	<i>Grewia orientalis</i>	වැල් කැලිය	N	LC					1		
76	Malvaceae	<i>Grewia tiliifolia</i>	දම්ණිය	N	LC					1	1	
77	Malvaceae	<i>Microcos paniculata</i>	කොහු කිරිල්ල	N	LC					1	1	
78	Malvaceae	<i>Theobroma cacao</i>	කොකෝවා	I	NE		1					
79	Melastomataceae	<i>Miconia crenata</i>	කටකළු බෝවිටියා	I	NE			1			1	
80	Meliaceae	<i>Cipadessa baccifera</i>	හල් බැඹිය	N	LC		1	1	1		1	1
81	Meliaceae	<i>Melia azedarach</i>	ලුණුමිදෙල්ල	I	DD			1		1		
82	Meliaceae	<i>Swietenia macrophylla</i>	මැහෝගනී	I	NE				1			
83	Menispermaceae	<i>Anamirta cocculus</i>	තිත්ත වැල්	N	LC	1		1	1		1	1
84	Menispermaceae	<i>Cissampelos pareira</i>	දියමිත්ත, යුස	N	LC			1				
85	Menispermaceae	<i>Stephania japonica</i>	ලුණුකැටිය වැල්	N	VU					1		
86	Menispermaceae	<i>Tinospora cordifolia</i>	රස කිද	N	LC					1		
87	Moraceae	<i>Allaeanthus zeylanicus</i>	අලදු	E	VU						1	
88	Moraceae	<i>Ficus exasperata</i>	බු තෙදිය	N	LC						1	1
89	Moraceae	<i>Ficus hispida</i>	කොට දිඹුල	N	LC	1	1	1		1		
90	Moraceae	<i>Ficus racemosa</i>	අච්චික්කා	N	LC	1			1	1		
91	Moraceae	<i>Ficus tsjakela</i>	කිරිපෙල්ල	N	LC						1	
92	Moraceae	<i>Streblus asper</i>	ගැට නෙටුල්	N	LC	1			1	1	1	1
93	Myrtaceae	<i>Psidium guajava</i>	ජේර	I	NE			1				
94	Oleaceae	<i>Jasminum flexile</i>		N	LC						1	
95	Onagraceae	<i>Ludwigia hyssopifolia</i>		I	NE	1						
96	Oxalidaceae	<i>Biophytum intermedium</i>		N	EN	1						
97	Phyllanthaceae	<i>Breynia androgyna</i>	ජපත් බටු	N	LC						1	
98	Phyllanthaceae	<i>Breynia vitis-idaea</i>	ගස් කයිල	N	LC					1		
99	Phyllanthaceae	<i>Bridelia retusa</i>	කැට කැල	N	LC			1			1	1

	Family	Scientific Name	Common Name	DS	CS	P20	P21	P22	P23	P24	P25	P26
100	Phyllanthaceae	<i>Flueggea leucopyrus</i>	හීන් කටු පිළ, කටු පිළ	N	LC		1			1	1	1
101	Phyllanthaceae	<i>Margaritaria indica</i>	කරව්, මහ කරවු	N	LC	1		1				
102	Phyllanthaceae	<i>Phyllanthus amarus</i>	පිටවක්කා	N	NE		1	1				
103	Phytolaccaceae	<i>Rivina humilis</i>	දිම්බිජු	I	NE						1	
104	Piperaceae	<i>Piper nigrum</i>	ගම්මිරිස්	I	NE						1	
105	Poaceae	<i>Urochloa maxima</i>	ගිණි තණ	I	NE						1	
106	Rhamnaceae	<i>Ziziphus oenopolia</i>	හීන් එරමිණියා	N	LC	1	1	1	1	1		
107	Rubiaceae	<i>Coffea arabica</i>	කෝපි	I	NE	1					1	1
108	Rubiaceae	<i>Ophiorrhiza mungos</i>	දත් කැටිය	N	LC			1				
109	Rubiaceae	<i>Spermacoce latifolia</i>		I	NE		1					1
110	Rubiaceae	<i>Spermacoce ocymifolia</i>		I	NE		1					
111	Rutaceae	<i>Atalantia ceylanica</i>	යකිනාරං	N	LC						1	
112	Rutaceae	<i>Glycosmis angustifolia</i>	බොල් පතා	N	NT						1	
113	Rutaceae	<i>Glycosmis pentaphylla</i>	දොඩම් පතා	N	LC				1			
114	Rutaceae	<i>Limonia acidissima</i>	දිවුල්, ජුල්	N	LC						1	
115	Rutaceae	<i>Murraya paniculata</i>	ඇට්ටේරියා	N	LC				1	1	1	
116	Sapindaceae	<i>Allophylus cobbe</i>	කොබ්බෑ	N	LC	1			1	1		
117	Sapindaceae	<i>Cardiospermum microcarpum</i>	පෙනෙල වැල්	N	NT		1					
118	Sapotaceae	<i>Chrysophyllum cainito</i>	කොස් ඇට ලාවුළු	I	NE						1	
119	Verbenaceae	<i>Lantana camara</i>	ගදපාන	I	NE	1	1	1	1		1	1
120	Verbenaceae	<i>Stachytarpheta jamaicensis</i>	බලුනකුට	I	NE		1	1		1		
121	Vitaceae	<i>Leea indica</i>	බුරුල්ල	N	LC	1						

Annex 2b. The list of animal species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **N** - Native, **I** – Introduced, **M** - Migrant. **CS** - Conservation Status (National Conservation Status or * Global Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** – Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** – Vulnerable. **D##**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	P20	P21	P22	P23	P24	P25	P26
Dragonflies												
1	Euphaeidae	<i>Euphaea splendens</i>	Shining Gossamerwing	E	LC*	1						
2	Coenagrionidae	<i>Pseudagrion rubriceps</i>	Orange-faced Sprite	N	LC*	1						
3	Platycnemididae	<i>Elattoneura centralis</i>	Dark-glittering Threadtail	E	LC*	1		1	1			
4	Platystictidae	<i>Ceylonosticta brincki</i>	Brinck's Shadowdamsel	E	LC*	1						
5	Platystictidae	<i>Ceylonosticta walli</i>	Wall's shadowdamsel	E	EN*	1						
6	Gomphidae	<i>Heliogomphus walli</i>	Wall's Grappleletail	E	NT*	1						
7	Aeshnidae	<i>Anax immaculifrons</i>	Fiery Emperor	N	VU	1						
8	Libellulidae	<i>Orthetrum pruinosum</i>	Pink Skimmer	N	NT	1		1				
9	Libellulidae	<i>Trithemis festiva</i>	Indigo Dropwing	N	VU	1						
10	Libellulidae	<i>Pantala flavescens</i>	Wandering Glider	N	LC			1				
Butterflies												
1	Papilionidae	<i>Pachliopta aristolochiae</i>	Common Rose	N	LC	1				1		
2	Papilionidae	<i>Papilio polytes</i>	Common Mormon	N	LC	1		1				
3	Papilionidae	<i>Papilio polymnestor</i>	Blue Mormon	N	LC	1		1		1	1	
4	Papilionidae	<i>Graphium agamemnon</i>	Tailed Jay	N	LC	1						
5	Pieridae	<i>Leptosia nina</i>	Psyche	N	LC			1				
6	Pieridae	<i>Appias galene</i>	Sri Lankan Lesser Albatross	E	LC	1					1	

	Family	Scientific Name	Common Name	DS	CS	P20	P21	P22	P23	P24	P25	P26
7	Pieridae	<i>Pareronia ceylanica</i>	Dark Wanderer	N	LC	1				1		
8	Pieridae	<i>Catopsilia pomona</i>	Lemon Emigrant	N	LC	1	1	1	1			
9	Pieridae	<i>Eurema hecabe</i>	Common Grass Yellow	N	LC	1	1	1				
10	Pieridae	<i>Eurema blanda</i>	Three-Spot Grass Yellow	N	LC	1						
11	Nymphalidae	<i>Tirumala limniace</i>	Blue Tiger	N	LC		1	1				
12	Nymphalidae	<i>Parantica aglea</i>	Glassy Tiger	N	LC	1				1		
13	Nymphalidae	<i>Danaus genutia</i>	Common Tiger	N	LC	1						
14	Nymphalidae	<i>Euploea core</i>	Common Crow	N	LC	1	1					
15	Nymphalidae	<i>Cirrochroa thais</i>	Tamil Yeoman	N	LC	1		1				
16	Nymphalidae	<i>Cethosia nietneri</i>	Tamil Lace Wing	N	LC	1						
17	Nymphalidae	<i>Acraea terpsicore</i>	Tawny Coster	N	LC			1				
18	Nymphalidae	<i>Hypolimnas bolina</i>	Great Eggfly	N	LC		1					
19	Nymphalidae	<i>Junonia iphita</i>	Chocolate Soldier	N	LC	1	1	1	1			
20	Nymphalidae	<i>Pantoporia hordonia</i>	Common Lascar	N	NT	1						
21	Nymphalidae	<i>Neptis hylas</i>	Common Sailor	N	LC	1	1					
22	Nymphalidae	<i>Mycalesis patnia</i>	Sri Lanka Gladeye Bushbrown	E	LC					1		
23	Nymphalidae	<i>Ypthima ceylonica</i>	White Four-ring	N	LC	1	1	1				
24	Lycaenidae	<i>Spalgis epeus</i>	Apefly	N	LC					1		
25	Lycaenidae	<i>Surendra quercetorum</i>	Common Acacia Blue	N	LC	1						
26	Lycaenidae	<i>Prosotas nora</i>	Common Lineblue	N	LC	1						
27	Lycaenidae	<i>Jamides celeno</i>	Common Cerulean	N	LC	1	1	1				
28	Lycaenidae	<i>Castalius rosimon</i>	Common Pierrot	N	LC	1	1					
29	Lycaenidae	<i>Talicerca nyseus</i>	Red Pierrot	N	LC			1				
30	Lycaenidae	<i>Zizina otis</i>	Lesser Grass Blue	N	LC			1				
31	Lycaenidae	<i>Zizula hylax</i>	Tiny Grass Blue	N	LC			1				
32	Hesperiidae	<i>Tagiades japetus</i>	Common Snow Flat	N	LC	1						
33	Hesperiidae	<i>Caprona ransonnettii</i>	Golden Angle	N	LC	1						
34	Hesperiidae	<i>Iambrix salsala</i>	Chestnut Bob	N	LC			1				

	Family	Scientific Name	Common Name	DS	CS	P20	P21	P22	P23	P24	P25	P26
35	Hesperiidae	<i>Potanthus satra</i>	Sri Lankan Dart/Tropic dart	E	LC	1						
36	Hesperiidae	<i>Pelopidas agna</i>	Little Branded Swift	N	NT	1	1					
Freshwater Fish												
1	Cyprinidae	<i>Garra ceylonensis</i>	Sri Lanka Stone Sucker	E	NT							1
2	Channidae	<i>Channa kelaartii</i>	Brown Snakehead	N	NT							1
Amphibians												
1	Bufo	<i>Duttaphrynus melanostictus</i>	Common toad	N	LC						1	
2	Microhylidae	<i>Uperodon taprobanicus</i>	Sri Lankan bullfrog	N	LC						1	
3	Ranidae	<i>Indosylvirana temporalis</i>	Bronzed frog	E	NT*	1					1	
4	Dicroglossidae	<i>Minervarya agricola</i>	Common paddy field frog	N	LC						1	
5	Rhacophoridae	<i>Pseudophilautus popularis</i>	Common shrub frog	E	VU*						1	
Reptiles												
1	Agamidae	<i>Calotes calotes</i>	Green forest Lizard	N	LC	1						
2	Agamidae	<i>Calotes versicolor</i>	Garden Lizard	N	LC		1	1				
3	Agamidae	<i>Otocryptis wiegmanni</i>	Sri Lankan Kangaroo Lizard	E	LC*	1					1	1
4	Gekkonidae	<i>Hemidactylus depressus</i>	Kandian Gecko	E	LC*	1						
5	Scincidae	<i>Eutropis greeri</i>	Greer's Skink	E	DD*	1						
6	Scincidae	<i>Eutropis madaraszi</i>	Spotted Skink	E	LC*		1	1				
Birds												
1	Accipitridae	<i>Ictinaetus malayensis</i>	Black Eagle	N	NT		1		1			
2	Accipitridae	<i>Spilornis cheela</i>	Crested Serpent-eagle	N	LC		1	1				
3	Accipitridae	<i>Accipiter badius</i>	Shikra	N	LC			1				
4	Columbidae	<i>Chalcophaps indica</i>	Emerald Dove	N	LC	1				1		1

	Family	Scientific Name	Common Name	DS	CS	P20	P21	P22	P23	P24	P25	P26
5	Columbidae	<i>Ducula aenea</i>	Green Imperial-Pigeon	N	LC							1
6	Columbidae	<i>Treron pompadora</i>	Sri Lanka Green-Pigeon	E	LC		1					
7	Psittacidae	<i>Psittacula calthropae</i>	Sri Lanka Emerald-collared Parakeet	E	NT						1	1
8	Psittacidae	<i>Loriculus beryllinus</i>	Sri Lanka Hanging Parrot	E	LC		1	1			1	
9	Cuculidae	<i>Eudynamys scolopaceus</i>	Asian Koel	N	LC					1		
10	Cuculidae	<i>Centropus sinensis</i>	Greater Coucal	N	LC					1		
11	Apodidae	<i>Cypsiurus balasiensis</i>	Asian Palm-swift	N	LC		1					
12	Hemiprocnidae	<i>Hemiprocne coronata</i>	Crested Treeswift	N	LC	1					1	1
13	Alcedinidae	<i>Ceyx erithaca</i>	Black-backed Kingfisher	N	NT							1
14	Alcedinidae	<i>Halcyon smyrnensis</i>	White-throated Kingfisher	N	LC		1					
15	Bucerotidae	<i>Ocyrceros gingalensis</i>	Sri Lanka Grey Hornbill	E	LC				1			
16	Ramphastidae	<i>Megalaima zeylanica</i>	Brown-headed Barbet	N	LC					1	1	1
17	Ramphastidae	<i>Megalaima rubricapillus</i>	Sri Lanka Barbet	E	LC	1	1	1	1		1	1
18	Ramphastidae	<i>Megalaima flavifrons</i>	Sri Lanka Yellow-fronted Barbet	E	LC	1	1	1			1	1
19	Picidae	<i>Chrysocolaptes stricklandi</i>	Greater Sri Lanka Flameback	E	LC						1	
20	Aegithinidae	<i>Aegithina tiphia</i>	Common Iora	N	LC	1	1			1		
21	Campephagidae	<i>Pericrocotus flammeus</i>	Scarlet Minivet	N	LC		1					
22	Campephagidae	<i>Hemipus picatus</i>	Bar-winged Flycatcher-shrike	N	LC		1					
23	Campephagidae	<i>Coracina melanoptera</i>	Black-headed Cuckoo-shrike	N	LC	1	1					
24	Campephagidae	<i>Tephrodornis pondicerianus</i>	Sri Lanka Wood-shrike	E	LC		1		1			
25	Oriolidae	<i>Oriolus xanthornus</i>	Black-hooded Oriole	N	LC		1		1	1	1	
26	Dicruridae	<i>Dicrurus caeruleus</i>	White-bellied Drongo	N	LC		1		1			
27	Pycnonotidae	<i>Pycnonotus cafer</i>	Red-vented Bulbul	N	LC	1	1		1			

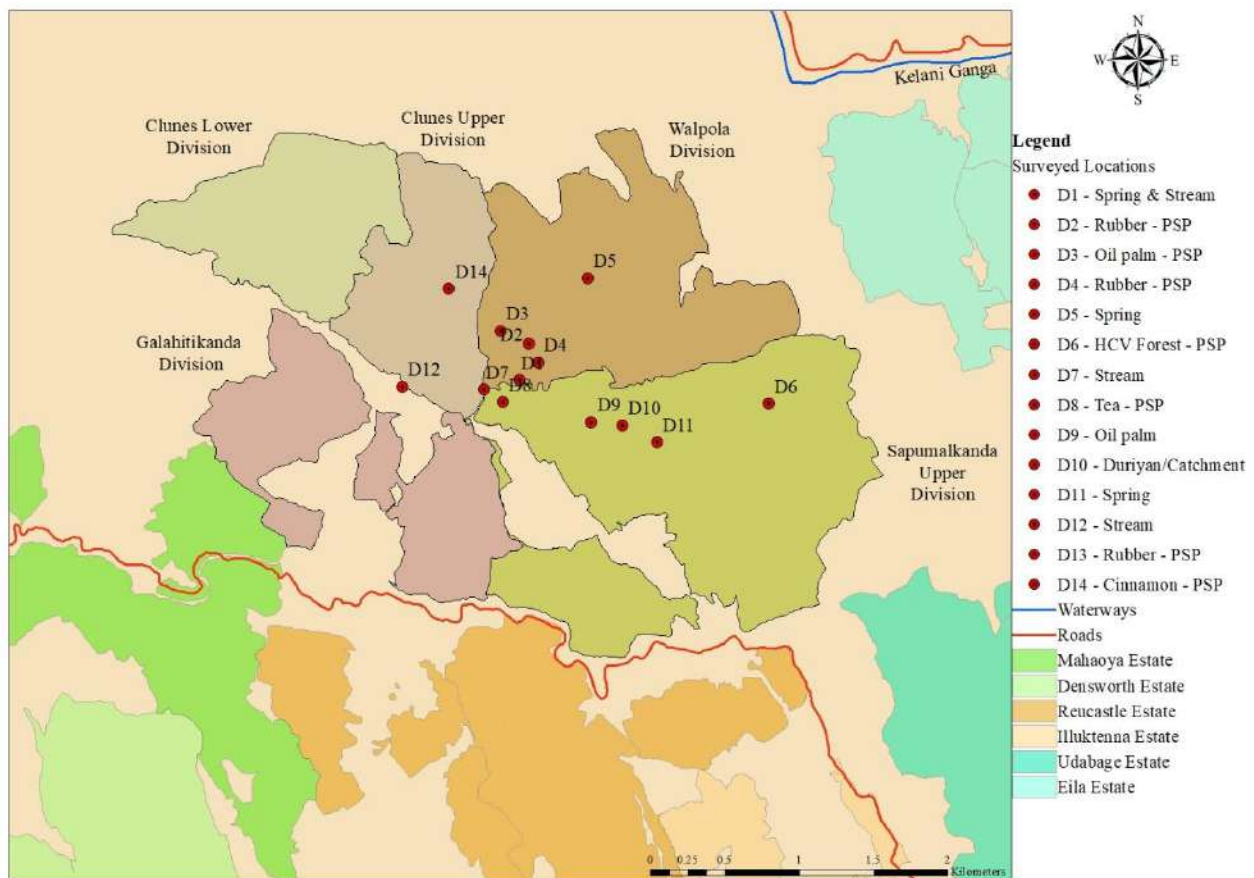
	Family	Scientific Name	Common Name	DS	CS	P20	P21	P22	P23	P24	P25	P26
28	Pycnonotidae	<i>Pycnonotus luteolus</i>	White-browed Bulbul	N	LC		1		1	1	1	
29	Pycnonotidae	<i>Iole indica</i>	Yellow-browed Bulbul	N	LC	1						
30	Sylviidae	<i>Orthotomus sutorius</i>	Common Tailorbird	N	LC	1				1	1	1
31	Timaliidae	<i>Turdoides affinis</i>	Yellow-billed Babbler	N	LC						1	
32	Zosteropidae	<i>Zosterops palpebrosus</i>	Oriental White Eye	N	LC		1	1			1	1
33	Sturnidae	<i>Gracula religiosa</i>	Hill Myna	N	LC	1		1				1
34	Muscicapidae	<i>Cyornis tickelliae</i>	Tickell's Blue Flycatcher	N	LC	1	1					
35	Dicaeidae	<i>Dicaeum erythrorhynchos</i>	Pale-billed Flowerpecker	N	LC		1	1				
36	Nectariniidae	<i>Nectarinia zeylonica</i>	Purple-rumped Sunbird	N	LC		1					1
37	Estrildidae	<i>Lonchura punctulata</i>	Scaly-breasted Munia	N	LC	1						
Mammals												
1	Manidae	<i>Manis crassicaudata</i>	Pangolin	N	NT	1						
2	Megadermatidae	<i>Megaderma spasma</i>	Lesser False Vampire bat	N	VU						1	
3	Cercopithecidae	<i>Macaca sinica</i>	Sri Lanka toque monkey	E	LC			1			1	1
4	Viverridae	<i>Paradoxurus hermaphoditus</i>	Palm cat	N	LC							1
5	Cervidae	<i>Muntiacus muntjak</i>	Barking deer	N	NT					1		
6	Suidae	<i>Sus scrofa</i>	Wild boar	N	LC					1	1	
7	Hystricidae	<i>Hystrix indica</i>	Porcupine	N	LC	1	1	1			1	1
8	Sciuridae	<i>Funambulus palmarum</i>	Palm squirrel	N	LC						1	
9	Leporidae	<i>Lepus nigricollis</i>	Black-naped hare	N	LC			1				
10	Mustelidae	<i>Lutra lutra</i>	Otter	N	VU	1						

Sapumalkanda Estate

1. Introduction

Sapumalkanda estate is managed under the Sapumalkanda Group of Lalan Rubbers Pvt. Ltd. It is located in the Kegalle District and has a total extent of 801.99 ha. There are five divisions in the estate and the primary crops grown are rubber and oil palm while some extents of tea and cinnamon are also present. The extent of conservation areas in the estate is 5 ha. There is a conservation forest in the Sap-Upper Division and several important water sources are also present in the estate.

Sapumalkanda estate is located in the wet climatic zone of the country. Ecologically the area is near the conjunction of three floristic zones, i.e., Northern Wet Lowland Floristic Zone, Sinharaja and Rathnapura Floristic Zone and Foothills of Adam's Peak and Ambagamuwa Floristic Zone. The estate is located in the Kelani River basin.



Map of Sapumalkanda Estate with distribution of sampling sites (Table XX).

2. Methodological approach

2.1 Study locations: Altogether, 14 sampling sites were surveyed, 6 in the Sapumalkanda Division, 5 in Walpola Division and the other 3 in Clunes Upper Division. These include one Conservation forest with a HCV site, 3 Rubber Plots, 2 Oil palm sites, PSPs in Tea and Cinnamon and a several streams and springs. A summary of locations sampled are given in Table 1 and the distribution of the sampling plots within the Sapumalkanda estate is shown in Figure 1.

Table 1. The number of sites sampled within the Sapumalkanda Estate

Division	Site	Site type	Site code	Latitude	Longitude	Ele. (m)
Walpola	2016 OP 1/2, 2007 R/2016 OP	Spring and Stream	D1	6.97562	80.30634	197
	Rubber 2007	Rubber - PSP	D2	6.97785	80.30693	221
	2016 OP 2	Oil palm - PSP	D3	6.97860	80.30522	235
	Rubber 1996	Rubber - PSP	D4	6.97670	80.30750	225
	OP 2018	Spring	D5	6.98180	80.31049	253
Sapumalkanda	Conservation Forest/Rusty spotted cat HCV	Forest - PSP	D6	6.97421	80.32144	222
	Effluent treatment plant	Stream	D7	6.97505	80.30421	199
	Tea T4	Tea - PSP	D8	6.97429	80.30536	213
	2020 OP	Oil palm	D9	6.97309	80.31071	294
	Duriyan block	Duriyan/Catchment	D10	6.97289	80.31261	248
	Rubber 1999	Spring	D11	6.97187	80.31467	243
Clunes Upper	Rubber 2004	Stream	D12	6.97523	80.29927	181
	Rubber 2004	Rubber - PSP	D13	6.92720	80.29718	195
	Cinnamon	Cinnamon - PSP	D14	6.98116	80.30210	259

2.2 Study Period: This study was undertaken in July 2021 covering the wet season of the area.

2.3 Study techniques: Please refer Chapter 1.

3. Key Findings of the Biodiversity Assessment

Based on the results of the assessments conducted in the Sapumalkanda estate 162 species of plants and 164 species of animals were recorded. This included 40 species of endemic fauna, 13 species of endemic flora, 16 species of threatened fauna and 15 species of threatened flora. A summary of the species recorded under different taxonomic groups are presented in table 2. The detailed list of plants and animals observed during this study including their distribution and threat status is given in Annex 2a and 2b.

Table 2. Summary of the total fauna and flora recorded during the assessment.

Abbreviations used: CR - Critically Endangered; EN - Endangered; VU – Vulnerable, NT - Near Threatened, DD – Data Deficient.

Taxa	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Dragonflies	22	9	-	-	1	3	6	-
Butterflies	44	3	1	1	-	2	3	-
Freshwater Fish	9	4	-	-	-	1	4	-
Amphibians	10	7	-	-	-	3	3	-
Reptiles	11	4	-	-	-	-	-	1
Birds	59	11	-	-	-	1	3	-
Mammals	9	2	-	-	2	2	1	-
Sub-Total (Fauna)	164	40	1	1	3	12	20	1
Plants	162	13	64	1	2	12	5	1
Total (Species)	326	53	65	2	5	24	25	2

4. Important Findings of the Assessment

4.1. Critical Species

1. Silver Forget-Me-Not (*Catochrysops panormus*)

This butterfly species is listed as a nationally Critically Endangered and is found only in the wet lowlands. It is locally common in areas where its food plant *Flemingia macrophylla* grows. It was reported in two sites in Walpola Division (Site D5) and Clunes Upper Division (Site D14) in the Sapumalkanda Estate.



Silver Forget-Me-Not. Image: AS

2. *Flemingia macrophylla* (වල් පළු)

Flemingia macrophylla is a very rare shrub which has been listed as a Critically Endangered species in the 2020 National Red List assessment. As per the observations made, it was found in several locations in the rubber plantations and disturbed areas in Sapumalkanda estate. This is a very important species because it is the food plant of the Critically Endangered butterfly Silver Forget-Me-Not.



Flemingia macrophylla. Clunes Upper Division. Image: NC

4.2. Critical Habitats

1. Conservation Forest in the Sap Upper Division (Site D6)

The conservation forest area in the Sap-Upper Division represents a secondary wet zone forest habitat where many rare, endemic and threatened species are likely to occur. Species such as Sri Lanka Rock Frog, Corrugated Water Frog, Greer's Skink, and the flowering plants *Artabotrys hexapetalus*, *Oncosperma fasciculatum*, *Gyrinops walla* were observed near the PSP surveyed.

5. Conclusions and Recommendations

Results of the present assessment indicates that the total species richness and the number of endemic and threatened species recorded remains equal or higher in most instances compared to previous survey done in 2016. It should be noted that some of the species recorded during the previous assessments have not been recorded during the present survey and number of new species including endemic and threatened species have been newly recorded during the present assessment. Therefore, based on this data it can be safely concluded that the species richness as well as number of critical species (endemic and threatened species) have not undergone a decline between the two assessments.

Based on the findings of this assessment and the field observations the following set of recommendations can be made.

1. Take adequate steps to protect the *Flemingia macrophylla* observed in the Clunes Upper Division and Walpola Division because it is the food plant of the Critically Endangered butterfly Silver Forget-Me-Not recorded in these two divisions
2. Please refer the list of recommendations in the main report for additional recommendations.

No.	Family	Scientific Name	Common Name	DS	CS	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14
19	Apocynaceae	<i>Cryptolepis dubia</i>	වැල් රක් අත්තන, කිරි වැල්	N	VU													1	
20	Apocynaceae	<i>Gymnema sylvestre</i>	මස් බැද්ද, බිම් නුග	N	VU													1	
21	Apocynaceae	<i>Hemidesmus indicus</i>	හීන් ඉරමුසු, ඉරමුසු	N	LC									1				1	
22	Apocynaceae	<i>Wattakaka volubilis</i>	අඟුණ	N	LC													1	
23	Araceae	<i>Alocasia cucullata</i>	ගහල	I	NE													1	
24	Araceae	<i>Alocasia macrorrhizos</i>	හබරල	I	NE													1	
25	Araceae	<i>Caladium bicolor</i>		I	NE													1	
26	Araceae	<i>Colocasia esculenta</i>	ගහල	N	LC	1						1						1	1
27	Araceae	<i>Dieffenbachia seguine</i>		I	NE													1	
28	Araceae	<i>Lagenandra ovata</i>	කෙටෙල, වැනුල	N	LC													1	
29	Araceae	<i>Lasia spinosa</i>	කොහිල	N	LC							1							
30	Araceae	<i>Pothos scandens</i>	පෝචා වැල්	N	LC		1												
31	Araceae	<i>Syngonium angustatum</i>	වැල් කොහිල	I	NE													1	
32	Araliaceae	<i>Schefflera stellata</i>	ඉත්ත	N	LC					1								1	
33	Arecaceae	<i>Areca catechu</i>	පුවක්	I	NE													1	
34	Arecaceae	<i>Caryota urens</i>	කිතුල්	N	LC				1									1	
35	Arecaceae	<i>Oncosperma fasciculatum</i>	කටු කිතුල්	E	VU					1									
36	Asteraceae	<i>Acmella uliginosa</i>	හීන් අක්මැල්ල	N	LC				1										
37	Asteraceae	<i>Ageratum conyzoides</i>	හුලන්තලා	I	NE	1		1	1			1	1	1	1	1			1
38	Asteraceae	<i>Centratherum punctatum</i>		I	NE	1				1									1
39	Asteraceae	<i>Chromolaena odorata</i>	පොඩි සිඤ්ඤොමරන්	I	NE	1	1	1	1	1		1		1	1	1			
40	Asteraceae	<i>Crassocephalum crepidioides</i>		I	NE	1		1	1	1			1	1	1	1			1

No.	Family	Scientific Name	Common Name	DS	CS	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14
137	Rubiaceae	<i>Canthium coromandelicum</i>	කර	N	LC		1		1										
138	Rubiaceae	<i>Coffea arabica</i>	කෝපි	I	NE								1		1		1	1	
139	Rubiaceae	<i>Gaertnera vaginans</i>	පේර නඹල	E	LC						1								
140	Rubiaceae	<i>Gynochthodes umbellata</i>	කීර් වැල්	N	LC														1
141	Rubiaceae	<i>Hedyotis fruticosa</i>	වැරණිය	N	LC						1								
142	Rubiaceae	<i>Mussaenda frondosa</i>	මුස්සන්ද	N	LC									1					1
143	Rubiaceae	<i>Ophiorrhiza mungos</i>	දන් කැටිය	N	LC		1	1							1			1	
144	Rubiaceae	<i>Psydrax dicoccos</i> var. <i>dicoccos</i>	පණු කරව්	N	LC				1										
145	Rubiaceae	<i>Spermacoce latifolia</i>		I	NE	1	1		1			1	1	1	1	1			1
146	Rubiaceae	<i>Spermacoce ocymifolia</i>		I	NE		1		1			1		1	1	1			1
147	Rutaceae	<i>Acronychia pedunculata</i>	අන්කෝද	N	LC				1		1								
148	Rutaceae	<i>Atalantia ceylanica</i>	යකිතාරං	N	LC			1											
149	Rutaceae	<i>Toddalia asiatica</i>	කුඩුමිරිස්ස	N	LC		1	1	1						1				
150	Salicaceae	<i>Flacourtia indica</i>	උගුරුස්ස	N	LC							1							
151	Simaroubaceae	<i>Brucea javanica</i>	තිත්ත කොහොඹ	N	LC				1					1					
152	Solanaceae	<i>Physalis angulata</i>		I	NE								1		1				
153	Solanaceae	<i>Solanum torvum</i>	තීබ්බු	I	NE								1						
154	Symplocaceae	<i>Symplocos acuminata</i>	බෝඹු	N	LC		1	1	1	1	1			1	1	1		1	
155	Thymelaeaceae	<i>Gyrinops walla</i>	වල්ල පව්ව	N	VU						1								
156	Urticaceae	<i>Pilea microphylla</i>	පරිප්පු ගස්	I	NE								1			1	1		
157	Verbenaceae	<i>Lantana camara</i>	ගදපාන	I	NE			1	1	1				1	1				1
158	Verbenaceae	<i>Stachytarpheta cayennensis</i>		I	NE	1													1
159	Verbenaceae	<i>Stachytarpheta jamaicensis</i>	බලුනකුට	I	NE	1		1		1		1	1	1	1	1		1	1
160	Vitaceae	<i>Leea indica</i>	බුරුල්ල	N	LC		1					1							

No.	Family	Scientific Name	Common Name	DS	CS	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14
161	Zingiberaceae	<i>Boesenbergia rotunda</i>	අඹ කහ	I	NE									1					
162	Zingiberaceae	<i>Hedychium coronarium</i>	එළ මල්	I	NE	1											1		

Annex 2b. The list of animal species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **N** - Native, **I** – Introduced. **CS** - Conservation Status (National Conservation Status or * Global Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** – Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** – Vulnerable. **D1-D14**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14
Dragonflies																			
1	Calopterygidae	<i>Vestails nigrescens</i>	Black-tipped flashwing	N	LC*	1	1					1					1		1
2	Chlorocyphidae	<i>Libellago greeni</i>	Green's Gem	E	LC*		1										1		
3	Coenagrionidae	<i>Pseudagrion rubriceps</i>	Orange-faced Sprite	N	LC*	1													
4	Platycnemididae	<i>Copera marginipes</i>	Yellow Featherleg	N	LC	1											1		
5	Platycnemididae	<i>Elattoneura caesia</i>	Jungle Threadtail	E	NT*				1										
6	Platycnemididae	<i>Elattoneura centralis</i>	Dark-glittering Threadtail	E	LC*		1	1		1					1			1	1

	Family	Scientific Name	Common Name	DS	CS	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	
7	Platycnemididae	<i>Onychargia atrocyana</i>	Marsh Dancer	N	VU													1		
8	Platycnemididae	<i>Prodasineura sita</i>	Stripe-headed Threadtail	E	LC*	1											1			
9	Platystictidae	<i>Ceylonosticta brincki</i>	Brinck's Shadowdamsel	E	LC*					1										
10	Platystictidae	<i>Ceylonosticta cf. tropica</i>	Dark-shouldered Cornuted Shadowdamsel	E	EN*		1													
11	Platystictidae	<i>Platysticta apicalis</i>	Dark Forestdamsel	E	NT*		1													
12	Platystictidae	<i>Platysticta serendibica</i>	Serendib Forestdamsel	E	NT*		1											1		
13	Gomphidae	<i>Paragomphus henryi</i>	Brook Hooktail	E	NT*												1			
14	Libellulidae	<i>Orthetrum chrysis</i>	Spine-tufted Skimmer	N	VU													1		
15	Libellulidae	<i>Orthetrum glaucum</i>	Asian Skimmer	N	NT			1											1	
16	Libellulidae	<i>Orthetrum luzonicum</i>	Marsh Skimmer	N	NT	1				1			1							
17	Libellulidae	<i>Acisoma panorpoides</i>	Asian Pintail	N	LC	1				1										
18	Libellulidae	<i>Neurothemis tullia</i>	Pied Parasol	N	LC	1		1										1		
19	Libellulidae	<i>Trithemis aurora</i>	Crimson Dropwing	N	LC	1		1										1		
20	Libellulidae	<i>Trithemis festiva</i>	Indigo Dropwing	N	VU	1		1	1	1		1						1	1	1
21	Libellulidae	<i>Pantala flavescens</i>	Wandering Glider	N	LC														1	
22	Libellulidae	<i>Tramea limbata</i>	Sociable Glider	N	LC				1											
Butterflies																				
1	Papilionidae	<i>Troides darsius</i>	Sri Lankan Birdwing	E	LC				1					1						
2	Papilionidae	<i>Pachliopta aristolochiae</i>	Common Rose	N	LC		1								1					
3	Papilionidae	<i>Papilio polytes</i>	Common Mormon	N	LC		1							1			1			

	Family	Scientific Name	Common Name	DS	CS	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14
26	Nymphalidae	<i>Ypthima ceylonica</i>	White Four-ring	N	LC	1	1	1	1	1			1	1	1	1	1		1
27	Nymphalidae	<i>Elymnias hypermnestra</i>	Common Palmfly	N	LC	1			1										
28	Lycaenidae	<i>Jamides bochus</i>	Dark Cerulean	N	LC					1									
29	Lycaenidae	<i>Jamides celeno</i>	Common Cerulean	N	LC					1									1
30	Lycaenidae	<i>Catochrysops panormus</i>	Silver Forget-me-not	N	CR					1									1
31	Lycaenidae	<i>Castalius rosimon</i>	Common Pierrot	N	LC		1	1	1										
32	Lycaenidae	<i>Discolampa ethion</i>	Banded Blue Pierrot	N	LC				1										1
33	Lycaenidae	<i>Caleta decidia</i>	Angled Pierrot	N	LC														1
34	Hesperiidae	<i>Tagiades japetus</i>	Common Snow Flat	N	LC														1
35	Hesperiidae	<i>Tagiades litigiosa</i>	Water Snow Flat	N	VU											1			
36	Hesperiidae	<i>Ampittia dioscorides</i>	Bush Hopper	N	LC		1			1					1				
37	Hesperiidae	<i>Iambrix salsala</i>	Chestnut Bob	N	LC		1	1	1							1			1
38	Hesperiidae	<i>Erionota torus</i>	Rounded Palm Red Eye	I	NE											1			
39	Hesperiidae	<i>Taractrocera maevius</i>	Common Grass Dart	N	LC			1											
40	Hesperiidae	<i>Oriens goloides</i>	Common Dartlet	N	NT									1	1				1
41	Hesperiidae	<i>Potanthus satra</i>	Sri Lankan Dart/Tropic dart	E	LC		1				1			1					
42	Hesperiidae	<i>Parnara bada</i>	Smallest Swift	N	NT	1													
43	Hesperiidae	<i>Pelopidas agna</i>	Little Branded Swift	N	NT	1	1			1	1	1	1	1	1	1	1	1	1
44	Hesperiidae	<i>Pelopidas conjuncta</i>	Conjoined Swift	N	VU	1				1									
Freshwater Fish																			
1	Cyprinidae	<i>Garra ceylonensis</i>	Sri Lanka Stone Sucker	E	NT						1	1							
2	Cyprinidae	<i>Puntius bimaculatus</i>	Redside Barb	N	LC	1	1					1						1	
3	Danionidae	<i>Devario malabaricus</i>	Giant Danio	N	LC	1	1					1						1	

	Family	Scientific Name	Common Name	DS	CS	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14
2	Agamidae	<i>Calotes versicolor</i>	Garden Lizard	N	LC				1		1	1							1
3	Agamidae	<i>Otocryptis wiegmanni</i>	Sri Lankan Kangaroo Lizard	E	LC*	1									1				
4	Scincidae	<i>Lankascincus fallax</i>	Common Supple Skink	E	LC*														1
5	Scincidae	<i>Lankascincus cf. gansi</i>	Gans's Lanka Skink	E	LC*										1				
6	Scincidae	<i>Eutropis greeri</i>	Greer's Skink	E	DD*			1			1			1					
7	Varanidae	<i>Varanus bengalensis</i>	Land Monitor	N	LC	1													
8	Colubridae	<i>Ptyas mucosa</i>	Sri Lankan Rat Snake	N	LC						1		1						
9	Elapidae	<i>Naja naja</i>	Indian Cobra	N	LC*	1					1		1						
10	Viperidae	<i>Daboia russelii</i>	Indian Russell's Viper	N	LC*	1							1						
11	Viperidae	<i>Hypnale hypnale</i>	Merrem's Hump-nosed Pit Viper	N	LC*	1					1		1						
Birds																			
1	Phasianidae	<i>Pavo cristatus</i>	Indian Peafowl	N	LC	1		1											1
2	Rallidae	<i>Amaurornis phoenicurus</i>	White-breasted Waterhen	N	LC													1	
3	Accipitridae	<i>Haliastur indus</i>	Brahminy Kite	N	LC	1				1								1	
4	Accipitridae	<i>Spizaetus cirrhatus</i>	Changeable Hawk-eagle	N	LC		1												
5	Accipitridae	<i>Spilornis cheela</i>	Crested Serpent-eagle	N	LC									1	1	1			
6	Accipitridae	<i>Pernis ptilorhyncus</i>	Oriental Honey-buzzard	N	NT	1													
7	Charadriidae	<i>Vanellus indicus</i>	Red-wattled Lapwing	N	LC													1	
8	Columbidae	<i>Chalcophaps indica</i>	Emerald Dove	N	LC						1								
9	Columbidae	<i>Ducula aenea</i>	Green Imperial-Pigeon	N	LC								1	1					

	Family	Scientific Name	Common Name	DS	CS	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14
10	Columbidae	<i>Stigmatopelia chinensis</i>	Spotted Dove	N	LC	1		1	1	1			1	1			1		
11	Psittacidae	<i>Psittacula cyanocephala</i>	Plum-headed Parakeet	N	NT											1			
12	Psittacidae	<i>Loriculus beryllinus</i>	Sri Lanka Hanging Parrot	E	LC	1						1	1					1	
13	Cuculidae	<i>Eudynamys scolopaceus</i>	Asian Koel	N	LC	1	1							1					
14	Cuculidae	<i>Centropus sinensis</i>	Greater Coucal	N	LC	1	1		1				1					1	
15	Apodidae	<i>Cypsiurus balasiensis</i>	Asian Palm-swift	N	LC	1				1			1	1	1	1	1	1	1
16	Apodidae	<i>Collocalia unicolor</i>	Indian Swiftlet	N	LC					1			1						
17	Hemiprocnidae	<i>Hemiprocne coronata</i>	Crested Treeswift	N	LC		1		1				1		1			1	
18	Alcedinidae	<i>Alcedo atthis</i>	Common Kingfisher	N	LC													1	
19	Alcedinidae	<i>Halcyon smyrnensis</i>	White-throated Kingfisher	N	LC	1						1	1	1	1			1	
20	Meropidae	<i>Merops leschenaulti</i>	Chestnut-headed Bee-eater	N	LC										1				
21	Bucerotidae	<i>Ocyrceros gingalensis</i>	Sri Lanka Grey Hornbill	E	LC													1	
22	Ramphastidae	<i>Megalaima zeylanica</i>	Brown-headed Barbet	N	LC		1		1										1
23	Ramphastidae	<i>Megalaima rubricapillus</i>	Sri Lanka Barbet	E	LC	1	1	1	1	1	1			1		1		1	1
24	Ramphastidae	<i>Megalaima flavifrons</i>	Sri Lanka Yellow-fronted Barbet	E	LC		1	1			1		1	1	1	1		1	1
25	Picidae	<i>Dinopium psarodes</i>	Lesser Sri Lanka Flameback	E	LC	1	1		1				1						1
26	Picidae	<i>Picus chlorolophus</i>	Lesser Yellownape	N	NT			1											
27	Aegithinidae	<i>Aegithina tiphia</i>	Common Iora	N	LC		1			1				1		1			

	Family	Scientific Name	Common Name	DS	CS	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14
28	Campephagidae	<i>Pericrocotus flammeus</i>	Scarlet Minivet	N	LC		1	1								1			
29	Campephagidae	<i>Hemipus picatus</i>	Bar-winged Flycatcher-shrike	N	LC		1												
30	Campephagidae	<i>Coracina melanoptera</i>	Black-headed Cuckoo-shrike	N	LC			1											
31	Campephagidae	<i>Tephrodornis pondicerianus</i>	Sri Lanka Wood-shrike	E	LC	1		1											
32	Oriolidae	<i>Oriolus xanthornus</i>	Black-hooded Oriole	N	LC								1						
33	Dicruridae	<i>Dicrurus caerulescens</i>	White-bellied Drongo	N	LC								1	1	1		1		
34	Rhipiduridae	<i>Rhipidura aureola</i>	White-browed Fantail	N	LC		1					1							
35	Corvidae	<i>Corvus splendens</i>	House Crow	N	LC	1	1	1	1				1					1	
36	Corvidae	<i>Corvus levaillantii</i>	Jungle Crow	N	LC	1	1						1	1	1			1	
37	Hirundinidae	<i>Hirundo hyperythra</i>	Sri Lanka swallow	E	LC					1			1	1	1	1	1	1	
38	Cisticolidae	<i>Prinia socialis</i>	Ashy Prinia	N	LC								1						
39	Pycnonotidae	<i>Hypsipetes leucocephalus</i>	Asian Black Bulbul	N	LC					1								1	1
40	Pycnonotidae	<i>Pycnonotus melanicterus</i>	Black-crested Bulbul	E	LC					1									1
41	Pycnonotidae	<i>Pycnonotus cafer</i>	Red-vented Bulbul	N	LC	1	1	1	1	1			1	1	1	1		1	1
42	Pycnonotidae	<i>Iole indica</i>	Yellow-browed Bulbul	N	LC					1					1			1	
43	Sylviidae	<i>Orthotomus sutorius</i>	Common Tailorbird	N	LC	1	1		1	1			1		1			1	
44	Timaliidae	<i>Pellorneum fuscicapillus</i>	Sri Lanka Brown-capped Babbler	E	LC													1	
45	Timaliidae	<i>Dumetia hyperythra</i>	Tawny-bellied Babbler	N	LC					1									
46	Timaliidae	<i>Turdoides affinis</i>	Yellow-billed Babbler	N	LC	1				1			1	1				1	

	Family	Scientific Name	Common Name	DS	CS	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14
47	Timaliidae	<i>Pomatorhinus melanurus</i>	Sri Lanka Scimitar Babbler	E	LC						1								
48	Zosteropidae	<i>Zosterops palpebrosus</i>	Oriental White Eye	N	LC		1	1	1										1
49	Sturnidae	<i>Acridotheres tristis</i>	Common Myna	N	LC	1			1	1		1		1	1	1	1	1	1
50	Sturnidae	<i>Gracula religiosa</i>	Hill Myna	N	LC		1		1						1	1		1	
51	Muscicapidae	<i>Saxicoloides fulicatus</i>	Indian Robin	N	LC							1	1						
52	Muscicapidae	<i>Copsychus saularis</i>	Oriental Magpie Robin	N	LC								1				1		
53	Muscicapidae	<i>Cyornis tickelliae</i>	Tickell's Blue Flycatcher	N	LC			1			1								
54	Muscicapidae	<i>Copsychus malabaricus</i>	White Rumped Shama	N	LC						1								
55	Dicaeidae	<i>Dicaeum erythrorhynchos</i>	Pale-billed Flowerpecker	N	LC				1			1						1	
56	Dicaeidae	<i>Dicaeum vincens</i>	Sri Lanka White-throated Flowerpecker	E	VU								1						
57	Nectariniidae	<i>Nectarinia zeylonica</i>	Purple-rumped Sunbird	N	LC			1	1	1									
58	Passeridae	<i>Passer domesticus</i>	House Sparrow	N	LC								1						
59	Estrildidae	<i>Lonchura striata</i>	White-rumped Munia	N	LC													1	
Mammals																			
1	Manidae	<i>Manis crassicaudata</i>	Pangolin	N	NT					1									
2	Megadermatidae	<i>Megaderma spasma</i>	Lesser False Vampire bat	N	VU						1								
3	Cercopithecidae	<i>Macaca sinica</i>	Sri Lanka toque monkey	E	LC											1			
4	Cercopithecidae	<i>Semnopithecus vetulus</i>	Sri Lanka Purple-faced langur	E	EN		1						1						1

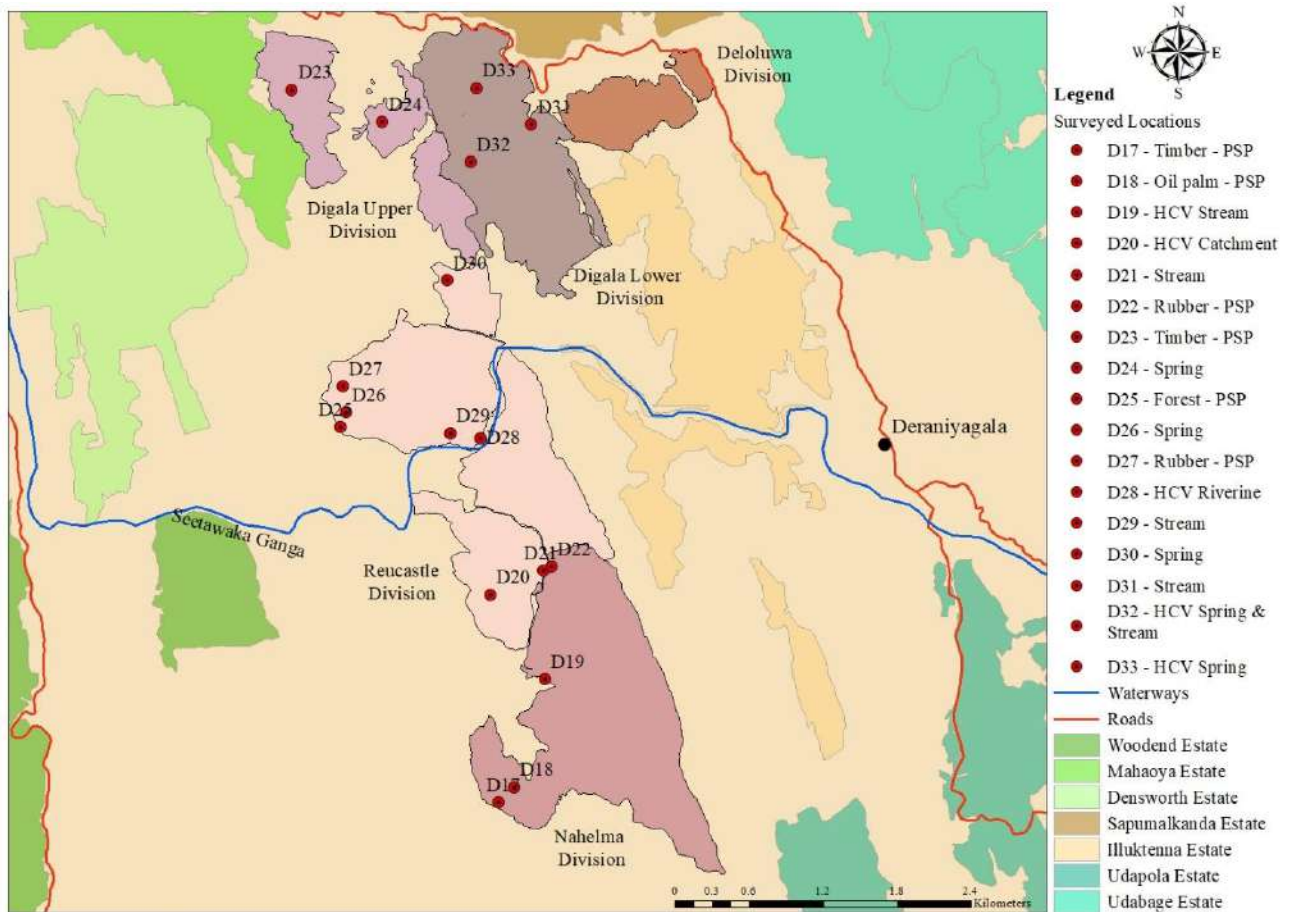
	Family	Scientific Name	Common Name	DS	CS	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14
5	Suidae	<i>Sus scrofa</i>	Wild boar	N	LC	1		1	1	1	1			1	1				
6	Hystricidae	<i>Hystrix indica</i>	Porcupine	N	LC		1												
7	Sciuridae	<i>Funambulus palmarum</i>	Palm squirrel	N	LC	1										1	1		
8	Mustelidae	<i>Lutra lutra</i>	Otter	N	VU						1								
9	Felidae	<i>Prionailurus viverrinus</i>	Fishing cat	N	EN								1						

Reucastle Estate

1. Introduction

Reucastle Estate is managed under the Sapumalkanda Group of Lalan Rubbers Pvt. Ltd. It is located in the Kegalle District and has a total extent of 858.94 ha. There are five divisions in the estate and the primary crops grown are rubber and oil palm while some extents of tea and timber blocks are also present. The extent of conservation areas in the estate is 31.22 ha. There is a conservation forest in the Reucastle Division and several HCV sites important for provision of freshwater and biodiversity conservation are also present in the estate.

Reucastle estate is located in the wet climatic zone of the country. Ecologically the area is near the conjunction of three floristic zones, i.e., Northern Wet Lowland Floristic Zone, Sinharaja and Rathnapura Floristic Zone and Foothills of Adam’s Peak and Ambagamuwa Floristic Zone. The estate is located in the Kelani River basin and Seethawaka Ganga, a tributary of Kelani River, flows across the estate.



Map of Reucastle Estate and the distribution of sampling sites (Table XX).

2. Methodological approach

2.1 Study locations: Altogether, 17 sampling sites were surveyed, 9 in Reucastle Division, 4 in Nahelma Division, 3 in Digala Lower Division and 1 in Digala Upper Division. These includes one Conservation Forest site, PSPs in Rubber, Oil Palm and Timber plantation fields and a several Springs, Streams and Catchment areas. A summary of locations sampled are given in Table 1 and the distribution of the sampling plots within the Reucastle estate is shown in Figure 1.

Table 1. The number of sites sampled within the Reucastle Estate

Division	Site	Site type	Site code	Latitude	Longitude	Ele. (m)
Nahelma	Timber - Toraliyana	Timber - PSP	D17	6.90457	80.30812	305
	Oil Palm 2018	Oil palm - PSP	D18	6.90568	80.30927	270
	Bulath Hapaya HCV	Stream	D19	6.91357	80.31154	207
	2000 Rubber / 2020 OP	Stream	D21	6.92147	80.31140	117
Reucastle	Rubber 2005 HCV	Catchment	D20	6.91972	80.30754	201
	Rubber 2008	Rubber - PSP	D22	6.92178	80.31202	129
	OP 1	Spring	D24	6.95422	80.29966	141
	Conservation forest	Forest - PSP	D25	6.93195	80.29662	232
	1995 Catchment area	Spring	D26	6.93302	80.29702	224
	Rubber 1995	Rubber - PSP	D27	6.93492	80.29679	264
	Rusty spotted cat HCV 1998	Riverine	D28	6.93114	80.30683	105
	Rubber 2020	Stream	D29	6.93151	80.30463	74
		Spring	D30	6.94265	80.30439	140
Digala Upper	Timber - Albizia	Timber - PSP	D23	6.95657	80.29306	165
Digala Lower	OP 2	Stream	D31	6.95403	80.31055	141
	OP1/OP2/Spotted Deer HCV	Spring and Stream	D32	6.95129	80.30610	231
	2007 Rubber/Cinnamon HCV	Spring	D33	6.95669	80.30652	187

2.2 Study Period: This study was undertaken in July 2021 covering the wet season of the area.

2.3 Study techniques: Please refer Chapter 1

3. Key Findings of the Biodiversity Assessment

Based on the results of the assessments conducted in the Reucastle estate 185 species of plants and 175 species of animals were recorded. This included 41 species of endemic fauna, 31 species of endemic flora, 28 species of threatened fauna and 20 species of threatened flora. A summary of the species recorded under different taxonomic groups are presented in table 2. The detailed list of plants and animals observed during this study including their distribution and threat status is given in Annex 2a and 2b.

Table 2. Summary of the total fauna and flora recorded during the assessment.

Abbreviations used: CR - Critically Endangered; EN - Endangered; VU – Vulnerable, NT - Near Threatened, DD – Data Deficient.

Taxa	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Dragonflies	20	5	-	-	1	5	4	-
Butterflies	53	4	-	-	-	7	4	-
Freshwater Fish	17	7	-	-	2	2	4	-
Amphibians	10	7	-	-	-	3	3	-
Reptiles	8	4	-	-	1	1	-	-
Birds	56	12	1*	-	-	1	5	-
Mammals	11	2	-	-	3	2	2	-
Sub-Total (Fauna)	175	41	0	0	7	21	22	0
Plants	185	31	55	2	2	16	11	3
Total (Species)	360	72	55	2	9	37	33	3

4. Important Findings of the Assessment

4.1. Critical Species

1. Sri Lanka Day's Killifish (*Aplocheilichthys dayi*)

Day's Killifish occupies the top water column and is mostly insectivorous. It prefers swampy habitats with a muddy substrate but is also seen in streams in the vicinity of swamps as well. It is an Endangered species and is restricted to the low country wet zone of Sri Lanka. It was observed in the stream in OP1 field in the Reucastle Division (Site D24).



Sri Lanka Day's Killifish (*Aplocheilichthys dayi*). Image: TR

2. *Strobilanthes thwaitesii*

This is a shrub growing up to about a meter. It is endemic to the country and found only in wet lowland and mid country forests. Known records are from Ambagamuwa, Pahiyangala, Kukule ganga and Deraniyagala. This species was observed at the Toraliyana Timber plot in the Nahelma Division (Site D17).



Strobilanthes thwaitesii. Nahelma Division. Image: NC

3. *Impatiens repens* (ගල් දෙමට)

An endemic prostrate herb that occurs mainly on rocks, in moist and shaded habitats in the wet zone up to about 1200 m of elevation. A population of this species was observed growing

on a wet rock near the HCV catchment in the Rubber 2005 field in the Reucastle Division (Site D20).



Impatiens repens. Reucastel Division. Image: NC

4.2. Critical Habitats

Conservation Forest in the Reucastle Division

The Conservation Forest in the Reucastle Division is one of the most important habitat in the estate. It is a densely grown forest where many native and endemic species are found. Some of the threatened species in the forest are Hump-nosed Lizard, the damselfly Ana Mia's Shadowdamsel, and the plant *Calamus zeylanicus*.

5. Conclusions and Recommendations

Results of the present assessment indicates that the total species richness and the number of endemic and threatened species recorded remains equal or higher in most instances compared to previous survey done in 2016. It should be noted that some of the species recorded during the previous assessments have not been recorded during the present survey and number of new species including endemic and threatened species have been newly recorded during the present assessment. Therefore, based on this data it can be safely concluded that the species richness as well as number of critical species (endemic and threatened species) have not undergone a decline between the two assessments.

Based on the findings of this assessment and the field observations the following set of recommendations can be made.

1. Stream ecosystems should not be disturbed as they support an important freshwater assemblage
2. Special attention should be given for the conservation of *Strobilanthes thwaitesii* observed in the Toraliyana Timber plot
3. Please refer the list of recommendations in the main report for additional recommendations.

	Family	Scientific Name	Common Name	DS	CS	D17	D18	D19	D20	D21	D22	D23	D24	D25	D26	D27	D28	D29	D30	D31
39	Asteraceae	<i>Sphagneticola trilobata</i>	උදය කුමාර්	I	NE		1	1		1								1		1
40	Asteraceae	<i>Tithonia diversifolia</i>	වල් සූරියකා න්ත	I	NE														1	
41	Balsaminaceae	<i>Impatiens flaccida</i>	කුඩළු	N	NT			1												
42	Balsaminaceae	<i>Impatiens repens</i>	ගල් දෙමට	E	EN				1											
43	Bignoniaceae	<i>Crescentia cujete</i>	රම්	I	NE										1					
44	Burseraceae	<i>Canarium zeylanicum</i>	කැකුණ	E	VU									1						
45	Calophyllaceae	<i>Calophyllum acidus</i>	කීන, දෙනි කීන, බටු කීන	E	VU									1		1				
46	Calophyllaceae	<i>Calophyllum inophyllum</i>	දොඹ	N	LC							1								
47	Cannabaceae	<i>Celtis timorensis</i>	ගුරුන්ද, ගුරුන්ද	N	LC										1					
48	Cannabaceae	<i>Trema orientale</i>	ගැඹුම්	N	LC	1						1								
49	Centroplacaceae	<i>Bhesa ceylanica</i>	පෙලන්	E	LC									1						
50	Cleomaceae	<i>Cleome ruidosperma</i>		N	LC	1														
51	Combretaceae	<i>Terminalia arjuna</i>	කුඹුක්	N	LC													1		
52	Combretaceae	<i>Terminalia catappa</i>	කොට්ට මිබා	I	NE													1		
53	Commelinaceae	<i>Commelina diffusa</i>	ගිරා පළා, තණ පළා	N	LC													1		
54	Convolvulaceae	<i>Argyreia thwaitesii</i>	මා බඳ, ගිරිනිල්ල	E	LC	1					1									
55	Convolvulaceae	<i>Camonea pilosa</i>	කිරි මදු, මහ මදු	N	LC													1		1
56	Cornaceae	<i>Alangium glandulosum</i>	රක් අඟුණ, අලඟ	N	VU					1										
57	Costaceae	<i>Costus afer</i>		I	NE							1								
58	Costaceae	<i>Hellenia speciosa</i>	තොඹු	N	LC	1		1			1						1	1		

	Family	Scientific Name	Common Name	DS	CS	D17	D18	D19	D20	D21	D22	D23	D24	D25	D26	D27	D28	D29	D30	D31
59	Crassulaceae	<i>Kalanchoe pinnata</i>	අක්කපාන	I	NE		1													
60	Dilleniaceae	<i>Dillenia suffruticosa</i>	පර	I	NE	1		1	1	1		1		1		1		1		
61	Dilleniaceae	<i>Dillenia triquetra</i>	දියපර	N	LC									1						
62	Dilleniaceae	<i>Schumacheria castaneifolia</i>	මහ කැකිරිවරා	E	LC									1						
63	Dilleniaceae	<i>Tetracera sarmentosa</i>	කොරොස වැල්	N	LC	1	1		1			1		1	1		1			
64	Elaeocarpaceae	<i>Elaeocarpus glandulifer</i>	ගල් වෙරළ	E	NT					1										
65	Elaeocarpaceae	<i>Elaeocarpus serratus</i>	වෙරළ	N	LC							1								
66	Euphorbiaceae	<i>Hevea brasiliensis</i>	රබර්	I	NE	1								1	1					
67	Euphorbiaceae	<i>Homonoia riparia</i>	සමනම	N	NT												1			
68	Euphorbiaceae	<i>Macaranga peltata</i>	කැන්ද	N	LC	1		1	1			1		1		1	1	1		
69	Euphorbiaceae	<i>Mallotus tetracoccus</i>	බු කැන්ද	N	LC	1			1			1		1						
70	Euphorbiaceae	<i>Suregada lanceolata</i>		N	LC												1			
71	Fabaceae	<i>Adenantha pavonina</i>	මදවිය, මංවාඩි	N	LC										1					
72	Fabaceae	<i>Crotalaria laburnifolia</i>	යක් බේරිය	N	LC	1	1													
73	Fabaceae	<i>Flemingia macrophylla</i>	වල් උදු	N	CR							1								
74	Fabaceae	<i>Grona heterocarpa</i>	අන් උදුපියලිය	N	VU				1		1					1		1	1	
75	Fabaceae	<i>Grona heterophylla</i>	මහ උදුපියලිය	N	LC				1			1						1		
76	Fabaceae	<i>Humboldtia laurifolia</i>	ගල් කරඳ	E	LC					1				1	1					
77	Fabaceae	<i>Mimosa pudica</i>	නිදිකුම්බා	I	NE	1												1	1	1
78	Fabaceae	<i>Mucuna bracteata</i>	මුකුණ	I	NE				1		1								1	1
79	Fabaceae	<i>Neustanthus phaseoloides</i>	පෝර වැල්	I	NE							1					1			
80	Fabaceae	<i>Peltophorum pterocarpum</i>	අයවක	I	NE												1			

	Family	Scientific Name	Common Name	DS	CS	D17	D18	D19	D20	D21	D22	D23	D24	D25	D26	D27	D28	D29	D30	D31
81	Fabaceae	<i>Senna alata</i>	ඇත්තෝර	I	NE													1		
82	Hypoxidaceae	<i>Curculigo orchioides</i>	බිම් තල්	N	LC						1				1					
83	Lamiaceae	<i>Clerodendrum chinense</i>		I	NE												1			
84	Lamiaceae	<i>Clerodendrum infortunatum</i>	ගස් පිත්ත, පිත්ත	N	LC									1	1					
85	Lamiaceae	<i>Clerodendrum paniculatum</i>	පිත්ත	I	NE		1													
86	Lamiaceae	<i>Hyptis capitata</i>		I	NE		1												1	
87	Lamiaceae	<i>Vitex altissima</i>	මිල්ල	N	NT									1						
88	Lauraceae	<i>Cinnamomum verum</i>	කුරුඳු, පත් කුරුඳු	E	VU									1						1
89	Lauraceae	<i>Litsea glutinosa</i>	බොම්බි, බොම්	N	LC												1			
90	Lauraceae	<i>Litsea longifolia</i>	රත් කැලිය	E	DD	1		1	1	1		1		1	1	1				
91	Lauraceae	<i>Neolitsea cassia</i> var. <i>cassia</i>	දවුල් කුරුඳු	N	LC	1											1			
92	Lecythidaceae	<i>Barringtonia racemosa</i>	දිය මිදෙල්ල	N	LC													1		
93	Lentibulariaceae	<i>Utricularia bifida</i>	කහ ඉන්දික් තරු	N	NT		1		1				1							
94	Lentibulariaceae	<i>Utricularia caerulea</i>	නිල් මොණරු ස්ස	N	LC								1							
95	Lentibulariaceae	<i>Utricularia uliginosa</i>		N	VU								1							
96	Linderniaceae	<i>Torenia crustacea</i>		N	LC				1											
97	Loranthaceae	<i>Taxillus incanus</i>		E	NT				1											
98	Lythraceae	<i>Lagerstroemia speciosa</i>	මුරුත	N	LC													1		
99	Malvaceae	<i>Hibiscus surattensis</i>	හීන් නාපිරිත්ත	N	LC	1									1					
100	Malvaceae	<i>Sida acuta</i>	ගස් බැබිල	N	LC							1								
101	Malvaceae	<i>Urena lobata</i>	පලිට ඇපල	N	LC	1	1	1				1	1					1		

	Family	Scientific Name	Common Name	DS	CS	D17	D18	D19	D20	D21	D22	D23	D24	D25	D26	D27	D28	D29	D30	D31
102	Malvaceae	<i>Urena lobata</i> subsp. <i>sinuata</i>	හීන් ඇපල	N	LC							1								
103	Malvaceae	<i>Durio zibethinus</i>	දුරියන්	I	NE			1												
104	Malvaceae	<i>Grewia orientalis</i>	වැල් කැලිය	N	LC					1										
105	Malvaceae	<i>Microcos paniculata</i>	කොහු කිරිලල	N	LC						1									
106	Malvaceae	<i>Triumfetta pentandra</i>	ඇපල, කපු කිනිස්ස	N	LC															1
107	Melastomataceae	<i>Heterotis rotundifolia</i>		I	NE				1										1	
108	Melastomataceae	<i>Melastoma malabathricum</i>	මහ බෝවිටියා	N	LC	1	1	1	1			1					1			
109	Melastomataceae	<i>Memecylon capitellatum</i>	දැදි කහ	E	LC						1									
110	Melastomataceae	<i>Memecylon umbellatum</i>	කොර කහ	N	LC						1			1						
111	Melastomataceae	<i>Miconia crenata</i>	කටකළ බෝවිටියා	I	NE	1	1				1	1		1			1	1		1
112	Melastomataceae	<i>Osbeckia octandra</i>	හීන් බෝවිටියා	E	LC														1	
113	Meliaceae	<i>Melia azedarach</i>	ලුණු මිදෙල්ල	I	DD	1								1						
114	Meliaceae	<i>Swietenia macrophylla</i>	මැහෝගනී	I	NE									1						
115	Menispermaceae	<i>Cyclea peltata</i>	කැහිපිත්තං	N	LC	1														
116	Moraceae	<i>Artocarpus heterophyllus</i>	කොප්	I	NE			1						1			1			
117	Moraceae	<i>Artocarpus hirsutus</i>	බු දෙල්	I	NE	1			1											
118	Moraceae	<i>Artocarpus nobilis</i>	වල් දෙල්	E	LC	1						1		1						
119	Moraceae	<i>Ficus exasperata</i>	බු නෙදිය	N	LC							1								
120	Moraceae	<i>Ficus hispida</i>	කොට දිඹුල	N	LC						1	1		1			1	1		
121	Moraceae	<i>Ficus tinctoria</i>	වල් ඇහැටු	N	LC												1			
122	Moraceae	<i>Ficus tsjakela</i>	කීරිපෙල්ල	N	LC												1			
123	Myristicaceae	<i>Horsfieldia iryagedhi</i>	රුක්	E	VU					1				1						

	Family	Scientific Name	Common Name	DS	CS	D17	D18	D19	D20	D21	D22	D23	D24	D25	D26	D27	D28	D29	D30	D31
124	Myrtaceae	<i>Syzygium caryophyllatum</i>	දං, හීන් දං	N	LC	1			1			1				1		1		
125	Myrtaceae	<i>Syzygium jambos</i>	හීන් ජම්බු	I	NE					1										
126	Myrtaceae	<i>Syzygium nervosum</i>	බට දඹ	N	LC					1										
127	Ochnaceae	<i>Campylospermum serratum</i>	බෝ කැර	N	LC	1						1		1		1				
128	Onagraceae	<i>Ludwigia hyssopifolia</i>		I	NE	1			1											
129	Orchidaceae	<i>Arundina graminifolia</i>		N	DD			1												
130	Orchidaceae	<i>Dendrobium macrostachyum</i>	පොසොන් මල්	N	LC				1											
131	Orchidaceae	<i>Luisia zeylanica</i>		N	LC				1											
132	Orchidaceae	<i>Polystachya concreta</i>		N	LC											1				
133	Oxalidaceae	<i>Oxalis barrelieri</i>		I	NE														1	
134	Pandanaceae	<i>Freycinetia pycnophylla</i>	වියකෙයියා, කොල්ල	E	VU									1						
135	Pandanaceae	<i>Freycinetia walkeri</i>	වියකෙයියා	E	NT										1					
136	Pandanaceae	<i>Pandanus kaida</i>	වැටකෙයියා	N	LC												1			
137	Passifloraceae	<i>Passiflora foetida</i>	පඩ ගෙඩි	I	NE	1														
138	Pedaliaceae	<i>Sesamum radiatum</i>		I	NE								1							
139	Phyllanthaceae	<i>Aporosa cardiosperma</i>	කැබැල්ල	N	LC							1				1				
140	Phyllanthaceae	<i>Aporosa lanceolata</i>	හීන් කැබැල්ල	E	LC				1					1						
141	Phyllanthaceae	<i>Breynia androgyna</i>	ජපන් බටු	N	LC	1						1					1			
142	Phyllanthaceae	<i>Breynia vitis-idaea</i>	ගස් කයිර	N	LC							1								
143	Phyllanthaceae	<i>Bridelia moonii</i>	පත් කැල	E	LC						1			1		1				
144	Phyllanthaceae	<i>Glochidion nemorale</i>		E	LC	1			1											
145	Phyllanthaceae	<i>Phyllanthus amarus</i>	පිටවක්කා	N	NE						1					1		1	1	
146	Piperaceae	<i>Peperomia pellucida</i>	දිය නිප්පලි	I	NE		1				1									
147	Piperaceae	<i>Piper nigrum</i>	ගම්මිරිස්	I	NE	1									1	1				

	Family	Scientific Name	Common Name	DS	CS	D17	D18	D19	D20	D21	D22	D23	D24	D25	D26	D27	D28	D29	D30	D31
148	Poaceae	<i>Bambusa multiplex</i>	චීන උණ, කුරු උණ	I	NE								1							
149	Poaceae	<i>Bambusa vulgaris</i>	කහ උණ	I	NE														1	
150	Poaceae	<i>Ochlandra stridula</i>	බට	E	LC	1				1		1	1	1	1			1		1
151	Poaceae	<i>Urochloa maxima</i>	ගිණි තණ	I	NE													1		
152	Rhamnaceae	<i>Ventilago gamblei</i>		N	LC					1										
153	Rhamnaceae	<i>Ziziphus oenopolia</i>	හීන් එරමිණියා	N	LC	1			1			1					1	1		
154	Rhamnaceae	<i>Ziziphus rugosa</i>	මහ එරමිණියා	N	NT	1						1		1		1				
155	Rhizophoraceae	<i>Carallia brachiata</i>	දවට	N	LC										1					
156	Rubiaceae	<i>Canthium coromandelicum</i>	කර	N	LC	1														
157	Rubiaceae	<i>Coffea arabica</i>	කෝපි	I	NE							1								
158	Rubiaceae	<i>Gaertnera vaginans</i>	පේර තඹල	E	LC	1								1	1					
159	Rubiaceae	<i>Gynochthodes umbellata</i>	කිරි වැල්	N	LC	1														
160	Rubiaceae	<i>Hedyotis fruticosa</i>	වැරණිය	N	LC			1	1					1						
161	Rubiaceae	<i>Ixora jucunda</i>	ගොඩ රත්මල්	E	NT					1										
162	Rubiaceae	<i>Mussaenda frondosa</i>	මුස්සන්ද	N	LC			1	1		1	1					1			
163	Rubiaceae	<i>Ophiorrhiza mungos</i>	දන් කැටිය	N	LC						1									
164	Rubiaceae	<i>Spermacoce latifolia</i>		I	NE	1					1	1								
165	Rubiaceae	<i>Spermacoce ocymifolia</i>		I	NE	1					1									
166	Rubiaceae	<i>Tarenna asiatica</i>	තරණ	N	LC							1								
167	Rutaceae	<i>Acronychia pedunculata</i>	අන්කෝන්ද	N	LC	1														
168	Rutaceae	<i>Melicope lunu-ankenda</i>	ලුණු අන්කෝන්ද	N	LC	1														
169	Rutaceae	<i>Toddalia asiatica</i>	කුඩු මිරිස්ස	N	LC	1								1						
170	Sapindaceae	<i>Allophylus cobbe</i>	කොබ්බි	N	LC												1			

	Family	Scientific Name	Common Name	DS	CS	D17	D18	D19	D20	D21	D22	D23	D24	D25	D26	D27	D28	D29	D30	D31
171	Sapindaceae	<i>Pometia pinnata</i>	බුලු මොර, නා ඉඹුල්, ගල් මොර	N	LC			1												
172	Sapotaceae	<i>Madhuca neriifolia</i>	ගං මී, ගුල පුෂ්ප	N	VU					1										
173	Simaroubaceae	<i>Brucea javanica</i>	නින්ත කොහොඹ	N	LC	1														
174	Smilacaceae	<i>Smilax zeylanica</i>	හීන් කබරප	N	NT	1														
175	Solanaceae	<i>Physalis angulata</i>		I	NE	1														
176	Symplocaceae	<i>Symplocos acuminata</i>	බෝඹු	N	LC	1	1		1		1	1		1		1		1		
177	Theaceae	<i>Camellia sinensis</i>	තේ	I	NE							1								
178	Thymelaeaceae	<i>Gyneros walla</i>	වල්ල පව්ව	N	VU									1						
179	Verbenaceae	<i>Lantana camara</i>	ගදපාන	I	NE	1	1													1
180	Verbenaceae	<i>Stachytarpheta cayennensis</i>		I	NE		1													
181	Verbenaceae	<i>Stachytarpheta jamaicensis</i>	බදුනකුව	I	NE			1		1										1
182	Vitaceae	<i>Leea indica</i>	බුරුල්ල	N	LC	1														
183	Zingiberaceae	<i>Alpinia purpurata</i>		I	NE									1						
184	Zingiberaceae	<i>Curcuma zedoaria</i>	හරන් කහ	I	NE			1												
185	Zingiberaceae	<i>Hedychium coronarium</i>	ඵල මල්	I	NE							1								

Annex 2b. The list of animal species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **N** - Native, **I** - Introduced, **M** - Migrant. **CS** - Conservation Status (National Conservation Status or * Global Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** - Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** - Vulnerable. D97-D106; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	D17	D18	D19	D20	D21	D22	D23	D24	D25	D26	D27	D28	D29	D30	D31
Dragonflies																				
1	Calopterygidae	<i>Neurobasis chinensis</i>	Oriental green-wing	N	VU														1	
2	Calopterygidae	<i>Vestails nigrescens</i>	Black-tipped flashwing	N	LC*												1	1		
3	Chlorocyphidae	<i>Libellago greeni</i>	Green's Gem	E	LC*												1	1		
4	Platycnemididae	<i>Copera marginipes</i>	Yellow Featherleg	N	LC			1												
5	Platycnemididae	<i>Prodasineura sita</i>	Stripe-headed Threadtail	E	LC*							1							1	
6	Platystictidae	<i>Ceylonosticta anamia</i>	Ana Mia's Shadowdamsel	E	VU*									1						
7	Platystictidae	<i>Ceylonosticta brincki</i>	Brinck's Shadowdamsel	E	LC*					1				1						
8	Gomphidae	<i>Burmagomphus pyramidalis</i>	Sinuate Clubtail	N	VU*												1			
9	Gomphidae	<i>Paragomphus henryi</i>	Brook Hooktail	E	NT*								1							1
10	Synthemistidae	<i>Macromidia donaldi</i>	Forest Shadow-emerald	N	EN*					1										
11	Libellulidae	<i>Orthetrum chrysis</i>	Spine-tufted Skimmer	N	VU				1											
12	Libellulidae	<i>Orthetrum glaucum</i>	Asian Skimmer	N	NT		1		1											
13	Libellulidae	<i>Orthetrum luzonicum</i>	Marsh Skimmer	N	NT							1								
14	Libellulidae	<i>Orthetrum pruinosum</i>	Pink Skimmer	N	NT	1														
15	Libellulidae	<i>Orthetrum sabina</i>	Green Skimmer	N	LC													1		

	Family	Scientific Name	Common Name	DS	CS	D17	D18	D19	D20	D21	D22	D23	D24	D25	D26	D27	D28	D29	D30	D31
16	Libellulidae	<i>Acisoma panorpoides</i>	Asian Pintail	N	LC		1													
17	Libellulidae	<i>Neurothemis tullia</i>	Pied Parasol	N	LC												1	1		
18	Libellulidae	<i>Trithemis aurora</i>	Crimson Dropwing	N	LC							1						1		
19	Libellulidae	<i>Trithemis festiva</i>	Indigo Dropwing	N	VU		1										1			
20	Libellulidae	<i>Pantala flavescens</i>	Wandering Glider	N	LC		1											1		
Butterflies																				
1	Papilionidae	<i>Papilio helenus</i>	Red Helen	N	VU				1					1						
2	Papilionidae	<i>Papilio polymnestor</i>	Blue Mormon	N	LC				1						1		1			
3	Papilionidae	<i>Graphium teredon</i>	Narrow-banded Bluebottle	N	LC									1		1				
4	Papilionidae	<i>Graphium agamemnon</i>	Tailed Jay	N	LC			1							1	1				
5	Pieridae	<i>Leptosia nina</i>	Psyche	N	LC		1					1	1				1	1	1	1
6	Pieridae	<i>Appias galene</i>	Sri Lankan Lesser Albatross	E	LC									1						
7	Pieridae	<i>Eurema hecabe</i>	Common Grass Yellow	N	LC							1					1	1	1	
8	Pieridae	<i>Eurema blanda</i>	Three-Spot Grass Yellow	N	LC	1														
9	Pieridae	<i>Eurema ormistoni</i>	Sri Lankan One-Spot Grass Yellow	E	VU				1	1					1					
10	Nymphalidae	<i>Parantica aglea</i>	Glassy Tiger	N	LC	1		1									1			
11	Nymphalidae	<i>Euploea core</i>	Common Crow	N	LC			1												
12	Nymphalidae	<i>Cupha erymanthis</i>	Rustic	N	LC									1						
13	Nymphalidae	<i>Cirrochroa thais</i>	Tamil Yeoman	N	LC									1						
14	Nymphalidae	<i>Cethosia nietneri</i>	Tamil Lace Wing	N	LC	1								1	1					
15	Nymphalidae	<i>Acraea terpsicore</i>	Tawny Coster	N	LC												1	1		
16	Nymphalidae	<i>Junonia atlites</i>	Grey Pansy	N	LC	1		1											1	
17	Nymphalidae	<i>Junonia iphita</i>	Chocolate Soldier	N	LC													1	1	

	Family	Scientific Name	Common Name	DS	CS	D17	D18	D19	D20	D21	D22	D23	D24	D25	D26	D27	D28	D29	D30	D31
18	Nymphalidae	<i>Neptis hylas</i>	Common Sailor	N	LC												1		1	
19	Nymphalidae	<i>Neptis jumbah</i>	Chestnut Streaked Sailor	N	LC												1			
20	Nymphalidae	<i>Moduza procris</i>	Commander	N	LC									1						
21	Nymphalidae	<i>Parthenos sylvia</i>	Clipper	N	LC		1							1	1					
22	Nymphalidae	<i>Euthalia lubentina</i>	Gaudy Baron	N	VU												1			
23	Nymphalidae	<i>Euthalia aconthea</i>	Baron	N	LC		1													
24	Nymphalidae	<i>Discophora lepida</i>	Southern Duffer	N	VU				1											
25	Nymphalidae	<i>Melanitis leda</i>	Common Evening Brown	N	LC		1						1							
26	Nymphalidae	<i>Melanitis phedima</i>	Dark Evening Brown	N	NT									1						
27	Nymphalidae	<i>Orsotriaena medus</i>	Medus Brown	N	LC			1		1		1	1			2				
28	Nymphalidae	<i>Mycalesis mineus</i>	Dark-Brand Bushbrown	N	LC										1					
29	Nymphalidae	<i>Mycalesis perseus</i>	Common Bushbrown	N	LC									1						
30	Nymphalidae	<i>Mycalesis patnia</i>	Sri Lanka Gladeye Bushbrown	E	LC									1	1					
31	Nymphalidae	<i>Ypthima ceylonica</i>	White Four-ring	N	LC	1	1			1	3	1					1	1	1	1
32	Nymphalidae	<i>Elymnias hypermnestra</i>	Common Palmfly	N	LC	1	1													
33	Lycaenidae	<i>Spalgis epeus</i>	Apefly	N	LC		1													
34	Lycaenidae	<i>Loxura atymnus</i>	Yamfly	N	LC		1													
35	Lycaenidae	<i>Nacaduba hermus</i>	Pale Four Lineblue	N	NT										1	1				
36	Lycaenidae	<i>Prosotas nora</i>	Common Lineblue	N	LC		1													
37	Lycaenidae	<i>Jamides bochus</i>	Dark Cerulean	N	LC					1		1								
38	Lycaenidae	<i>Jamides coruscans</i>	Sri Lankan Cerulean	E	VU										1					
39	Lycaenidae	<i>Jamides alecto</i>	Metallic Cerulean	N	LC										1					
40	Lycaenidae	<i>Jamides celeno</i>	Common Cerulean	N	LC												1			
41	Lycaenidae	<i>Castalius rosimon</i>	Common Pierrot	N	LC	1											1		1	
42	Lycaenidae	<i>Acytolepis puspa</i>	Common Hedge Blue	N	LC											1		1		

	Family	Scientific Name	Common Name	DS	CS	D17	D18	D19	D20	D21	D22	D23	D24	D25	D26	D27	D28	D29	D30	D31
43	Lycaenidae	<i>Neopithecops zalmora</i>	Quaker	N	LC										1					
44	Lycaenidae	<i>Megisba malaya</i>	Malayan	N	LC									1						
45	Riodinidae	<i>Abisara echerius</i>	Plum Judy	N	LC										1					
46	Hesperiidae	<i>Spialia galba</i>	Grizzled Skipper	N	LC	1													1	
47	Hesperiidae	<i>Ampittia dioscorides</i>	Bush Hopper	N	LC	1														
48	Hesperiidae	<i>Iambrix salsala</i>	Chestnut Bob	N	LC		1				1	1				1	1	1		
49	Hesperiidae	<i>Notocrypta paralyos</i>	Common Banded Demon	N	VU		1													
50	Hesperiidae	<i>Notocrypta curvifascia</i>	Restricted Demon	N	VU									1						
51	Hesperiidae	<i>Taractrocera maevius</i>	Common Grass Dart	N	LC	1														
52	Hesperiidae	<i>Oriens goloides</i>	Common Dartlet	N	NT			1												
53	Hesperiidae	<i>Pelopidas agna</i>	Little Branded Swift	N	NT			1								1				
Freshwater Fish																				
1	Cyprinidae	<i>Dawkinsia filamentosa</i>	Sri Lanka Filamented Barb	N	LC														1	
2	Cyprinidae	<i>Garra ceylonensis</i>	Sri Lanka Stone Sucker	E	NT			1					1						1	
3	Cyprinidae	<i>Puntius bimaculatus</i>	Redside Barb	N	LC								1							
4	Cyprinidae	<i>Puntius dorsalis</i>	Long-Snouted Barb	N	LC														1	
5	Cyprinidae	<i>Puntius kelumi</i>	Sri Lanka Redeye Barb	E	EN														1	
6	Cyprinidae	<i>Puntius titteya</i>	Sri Lanka Cherry Barb	E	VU		1	1					1							
7	Cyprinidae	<i>Systemus sarana</i>	Olive Barb	N	NE														1	
8	Cyprinidae	<i>Tor khudree</i>	Masheer	N	NT												1	1		
9	Danionidae	<i>Devario malabaricus</i>	Giant Danio	N	LC			1		1			1							
10	Danionidae	<i>Rasbora dandia</i>	Broad line Striped Rasbora	N	LC		1	1					1						1	

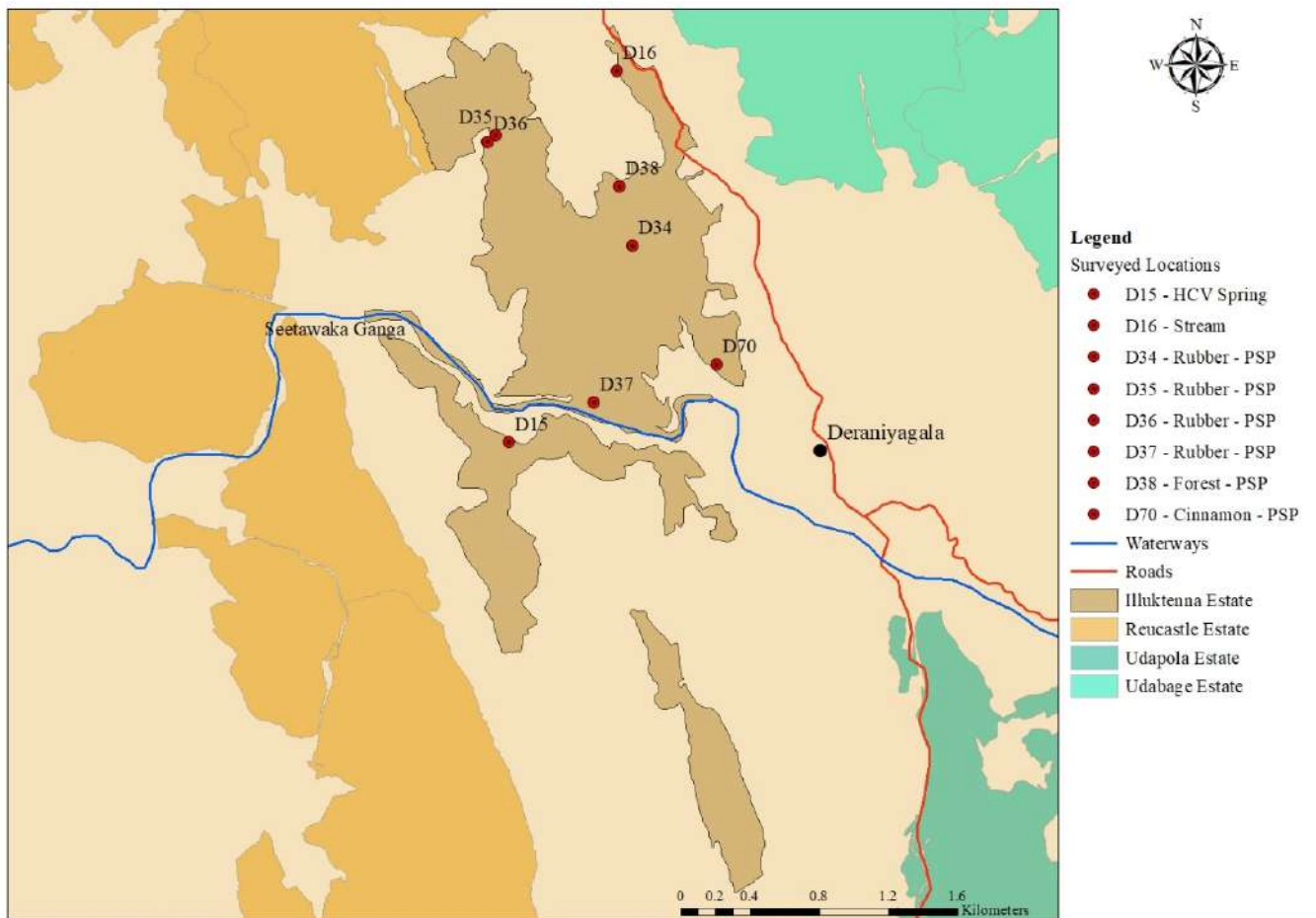
	Family	Scientific Name	Common Name	DS	CS	D17	D18	D19	D20	D21	D22	D23	D24	D25	D26	D27	D28	D29	D30	D31
2	Agamidae	<i>Calotes versicolor</i>	Garden Lizard	N	LC	1													1	
3	Agamidae	<i>Lyriocephalus scutatus</i>	Hump-nosed Lizard	E	VU*									1						
4	Agamidae	<i>Otocryptis wiegmanni</i>	Sri Lankan Kangaroo Lizard	E	LC*					1	1			1			1			
5	Gekkonidae	<i>Cnemaspis melligodai</i>	Molligoda's Daygecko	E	EN*			1												
6	Scincidae	<i>Lankascincus fallax</i>	Common Supple Skink	E	LC*	1														
7	Typhlopidae	<i>Typhlopidae sp. 1</i>						1												
8	Viperidae	<i>Hypnale hypnale</i>	Merrem's Hump-nosed Pit Viper	N	LC*								1							
Birds																				
1	Phasianidae	<i>Gallus lafayetii</i>	Sri Lanka Junglefowl	E	LC	1														
2	Phalacrocoracidae	<i>Phalacrocorax niger</i>	Little Cormorant	N	LC												1			
3	Accipitridae	<i>Spizaetus cirrhatus</i>	Changeable Hawk-eagle	N	LC			1						1						
4	Accipitridae	<i>Spilornis cheela</i>	Crested Serpent-eagle	N	LC		1													
5	Accipitridae	<i>Pernis ptilorhyncus</i>	Oriental Honey-buzzard	N	NT												1			
6	Accipitridae	<i>Accipiter badius</i>	Shikra	N	LC													1		
7	Charadriidae	<i>Vanellus indicus</i>	Red-wattled Lapwing	N	LC							1								
8	Columbidae	<i>Chalcophaps indica</i>	Emerald Dove	N	LC	1			1											
9	Columbidae	<i>Ducula aenea</i>	Green Imperial-Pigeon	N	LC	1						1		1	1					1
10	Columbidae	<i>Treron pompadora</i>	Sri Lanka Green-Pigeon	E	LC										1					
11	Columbidae	<i>Stigmatopelia chinensis</i>	Spotted Dove	N	LC	1														
12	Psittacidae	<i>Psittacula cyanocephala</i>	Plum-headed Parakeet	N	NT	1												1		

Illuktenna Estate

1. Introduction

Illukthenna Estate is managed under the Sapumalkanda Group of Lalan Rubbers Pvt. Ltd. It is located in the Kegalle District and has a total extent of 381.87 ha. There are two divisions in the estate and the primary crops grown are rubber and cinnamon. The extent of conservation areas in the estate is 13.44 ha. There is a conservation forest in the Illuktenna Division and a HCV site is present in the Udahenkanda Division.

Illuktenna estate is located in the wet climatic zone of the country. Ecologically the area is near the conjunction of three floristic zones, i.e., Northern Wet Lowland Floristic Zone, Sinharaja and Rathnapura Floristic Zone and Foothills of Adam's Peak and Ambagamuwa Floristic Zone. The estate is located in the Kelani River basin and Seethawaka Ganga, a tributary of the Kelani River, flows across the estate.



Map of Illuktenna Estate and the distribution of sampling sites (Table XX).

2. Methodological approach

2.1 Study locations: Altogether, 8 sampling sites were surveyed, 7 in Illuktenna Division and 1 in Udahenkanda Division. These includes one Conservation Forest site, PSPs in Rubber and Cinnamon fields and two Stream sites. A summary of locations sampled are given in Table 1 and the distribution of the sampling plots within the Illuktenna estate is shown in Figure 1.

Table 1. The number of sites sampled within the Illuktenna Estate

Division	Site	Site type	Site code	Latitude	Longitude	Ele. (m)
Udahenkanda	Muthupana Ella HCV	Spring	D15	6.93111	80.32018	155
Illuktenna	Cinnamon	Stream	D16	6.95041	80.32580	145
	Rubber 2020	Rubber - PSP	D34	6.94132	80.32658	207
	Rubber Young	Rubber - PSP	D35	6.94707	80.31948	303
	Rubber Mature	Rubber - PSP	D36	6.94671	80.31904	305
	Rubber Old	Rubber - PSP	D37	6.93318	80.32459	114
	Conservation Forest	Forest - PSP	D38	6.94440	80.32592	197
	Cinnamon 2020	Cinnamon - PSP	D70	6.93516	80.33096	142

2.2 Study Period: This study was undertaken in July 2021 and January 2022 covering the wet and dry seasons of the area.

2.3 Study techniques: Please refer Chapter 1

3. Key Findings of the Biodiversity Assessment

Based on the results of the assessments conducted in the Illuktenna estate 117 species of plants and 110 species of animals were recorded. This included 24 species of endemic fauna, 7 species of endemic flora, 6 species of threatened fauna and 8 species of threatened flora. A summary of the species recorded under different taxonomic groups are presented in table 2. The detailed list of plants and animals observed during this study including their distribution and threat status is given in Annex 2a and 2b.

Table 2. Summary of the total fauna and flora recorded during the assessment.

Abbreviations used: **CR** - Critically Endangered; **EN** - Endangered; **VU** – Vulnerable, **NT** - Near Threatened, **DD** – Data Deficient.

Taxa	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Dragonflies	14	5	-	-	-	-	5	-
Butterflies	28	2	-	-	-	2	2	-
Freshwater Fish	1	-	-	-	-	-	1	-
Amphibians	5	4	-	-	-	2	2	-
Reptiles	10	4	-	-	-	-	-	-
Birds	44	8	-	-	1	-	2	-
Mammals	8	1	-	-	-	1	2	-
Sub-Total (Fauna)	110	24	0	0	1	5	14	0
Plants	117	7	45	-	1	7	2	3
Total (Species)	227	31	45	0	2	12	16	3

4. Important Findings of the Assessment

4.1. Critical Species

1. Sri Lanka Rock Frog (*Nannophrys ceylonensis*)

Rock Frogs are unique amphibians adapted to the microhabitat of wet rock surfaces. Distributed in the lowland and mid country wet zone, Sri Lanka Rock Frog is a Vulnerable species. Populations of Rock Frogs were common in association of streams and wet rocky areas in the plantations in Deraniyagala region. At Illuktenna estate a healthy breeding population of adults and tadpoles were observed in Muthupana Ella HCV site in Udahenkanda Division and stream habitats in Illuktenna Division.



Sri Lanka Rock Frog. Udahenkanda Division. Image: AS

4.2. Critical Habitats

1. Muthupana Ella HCV in Udahenkanda Division

Muthupana Ella HCV site represents a critical aquatic habitat in the estate. The stream and the riverine habitat provides a critical habitat for several endemic species including amphibians such as Sri Lanka Rock Frog and Corrugated Water Frog, and dragonflies such as Wall's Grappletail. The forest area around the site is also likely to harbor additional rare and threatened species.



Muthupana Ella HCV Site

5. Conclusions and Recommendations

Results of the present assessment indicates that the total species richness and the number of endemic and threatened species recorded remains equal or higher in most instances

compared to previous survey done in 2016. It should be noted that some of the species recorded during the previous assessments have not been recorded during the present survey and number of new species including endemic and threatened species have been newly recorded during the present assessment. Therefore, based on this data it can be safely concluded that the species richness as well as number of critical species (endemic and threatened species) have not undergone a decline between the two assessments.

Based on the findings of this assessment and the field observations the following set of recommendations can be made.

1. The streams and riverine areas of the estate provide critical habitats for the biodiversity in the landscape. As the estate has a several considerably large streams flowing into the Seethawaka river which runs across the estate, it is recommended to conserve these habitats to support local biodiversity.
2. Please refer the list of recommendations in the main report for additional recommendations.

Annex 2a. The list of plant species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **I** - Introduced, **N** - Native. **CS** - Conservation Status (National Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** - Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** - Vulnerable. **D##**; Sites visited (Table XX).

No.	Family	Scientific Name	Common Name	DS	CS	D15	D16	D32	D33	D34	D35	D36	D37	D38	D70
1	Acanthaceae	<i>Asystasia variabilis</i>	ගඳ පුරක්	N	LC	1		1						1	
2	Acanthaceae	<i>Nicotaba betonica</i>	සුදු පුරක්	N	LC								1		
3	Acanthaceae	<i>Rostellularia procumbens</i>	මයානි	N	LC								1		
4	Acanthaceae	<i>Strobilanthes adenophora</i>	නෙළු	E	VU								1		
5	Acanthaceae	<i>Strobilanthes lupulina</i>	නෙළු	N	LC	1							1		
6	Acanthaceae	<i>Thunbergia grandiflora</i>		I	NE								1		
7	Amaranthaceae	<i>Achyranthes aspera</i>	කරල් හැබ	N	LC							1			
8	Anacardiaceae	<i>Spondias pinnata</i>	වල් අඹරුල්ලා	I	DD	1									
9	Apocynaceae	<i>Allamanda cathartica</i>	වැල් රක් අත්තන	I	NE										1
10	Apocynaceae	<i>Alstonia macrophylla</i>	හවරි කුඟ	I	NE			1	1				1	1	1
11	Apocynaceae	<i>Alstonia scholaris</i>	රක් අත්තන	N	LC								1		1
12	Apocynaceae	<i>Anodendron parviflorum</i>	දුල්, ගැරඩි දුල්	N	VU			1							
13	Apocynaceae	<i>Tabernaemontana dichotoma</i>	දිවි කදුරු	E	LC						1	1	1	1	
14	Araceae	<i>Colocasia esculenta</i>	ගහල	N	LC	1							1		
15	Araceae	<i>Pothos scandens</i>	පෝවා වැල්	N	LC	1							1	1	1
16	Araceae	<i>Syngonium angustatum</i>	වැල් කොහිල	I	NE										1
17	Arecaceae	<i>Caryota urens</i>	කිතුල්	N	LC			1					1	1	1
18	Asparagaceae	<i>Asparagus falcatus</i>	හානවාරිය	N	LC								1		
19	Asteraceae	<i>Ageratum conyzoides</i>	හුලන්නලා	I	NE			1		1				1	1

No.	Family	Scientific Name	Common Name	DS	CS	D15	D16	D32	D33	D34	D35	D36	D37	D38	D70
45	Fabaceae	<i>Crotalaria retusa</i>	කහ අඩනහිරිය	N	LC				1						
46	Fabaceae	<i>Grona heterocarpa</i>	ඇත් උදුපියලිය	N	VU					1	1	1	1		
47	Fabaceae	<i>Grona heterophylla</i>	මහ උදුපියලිය	N	LC					1			1		1
48	Fabaceae	<i>Grona triflora</i>	හීන් උදුපියලිය	N	LC	1									
49	Fabaceae	<i>Mimosa diplotricha</i> var. <i>diplotricha</i>	වැල් නිදිකුම්බා	I	NE								1		
50	Fabaceae	<i>Mimosa pudica</i>	නිදිකුම්බා	I	NE			1		1			1	1	
51	Fabaceae	<i>Mucuna bracteata</i>	මුකුණ	I	NE				1			1			
52	Fabaceae	<i>Neustanthus phaseoloides</i>	පෝර වැල්	I	NE	1				1			1	1	
53	Fabaceae	<i>Senegalia caesia</i>	හීඹරු	N	LC								1		
54	Fabaceae	<i>Senna tora</i>	පෙනි තෝර	I	NE								1		1
55	Lamiaceae	<i>Clerodendrum chinense</i>		I	NE									1	
56	Lamiaceae	<i>Clerodendrum paniculatum</i>	පින්ත	I	NE			1							
57	Lamiaceae	<i>Hyptis capitata</i>		I	NE	1					1		1	1	
58	Lamiaceae	<i>Mesosphaerum suaveolens</i>	අලි තල	I	NE			1							1
59	Lauraceae	<i>Cinnamomum verum</i>	කුරුඳු, පත් කුරුඳු	E	VU		1				1	1	1	1	
60	Lauraceae	<i>Litsea longifolia</i>	රත් කැලිය	E	DD		1				1		1	1	
61	Lauraceae	<i>Neolitsea cassia</i> var. <i>cassia</i>	දවුල් කුරුඳු	N	LC									1	
62	Lecythidaceae	<i>Barringtonia racemosa</i>	දිය මිදෙල්ල	N	LC								1		
63	Lentibulariaceae	<i>Utricularia striatula</i>		N	VU	1									
64	Loganiaceae	<i>Strychnos minor</i>	කදුරු කැටිය වැල්	N	LC								1		
65	Loranthaceae	<i>Dendrophthoe falcata</i>	දෙළුම් පිළිල	N	LC				1						
66	Malvaceae	<i>Sida acuta</i>	ගස් බැබිල	N	LC	1	1								
67	Malvaceae	<i>Urena lobata</i>	පව්ට ඇපල	N	LC	1						1			

No.	Family	Scientific Name	Common Name	DS	CS	D15	D16	D32	D33	D34	D35	D36	D37	D38	D70
68	Malvaceae	<i>Urena lobata</i> subsp. <i>sinuata</i>	හීන් ඇපල	N	LC							1			
69	Malvaceae	<i>Triumfetta pentandra</i>	ඇපල, කපු කිනිස්ස	N	LC										1
70	Melastomataceae	<i>Melastoma malabathricum</i>	මහ බෝවිටියා	N	LC	1	1	1	1	1	1		1		1
71	Melastomataceae	<i>Memecylon umbellatum</i>	කොර කහ	N	LC								1		
72	Melastomataceae	<i>Miconia crenata</i>	කටකළ බෝවිටියා	I	NE	1	1	1	1	1	1	1	1	1	1
73	Melastomataceae	<i>Osbeckia octandra</i>	හීන් බෝවිටියා	E	LC			1	1	1					1
74	Meliaceae	<i>Melia azedarach</i>	ලුණුමිදෙල්ල	I	DD		1	1							
75	Meliaceae	<i>Swietenia macrophylla</i>	මැහෝගනී	I	NE										1
76	Moraceae	<i>Artocarpus nobilis</i>	වල් දෙල්	E	LC									1	
77	Moraceae	<i>Ficus exasperata</i>	බු තෙදිය	N	LC	1		1					1	1	
78	Moraceae	<i>Ficus hispida</i>	කොට දිඹුල	N	LC	1	1	1			1		1	1	
79	Moraceae	<i>Ficus religiosa</i>	බෝ	I	NE	1									
80	Moraceae	<i>Ficus tinctoria</i>	වල් ඇහැටු	N	LC	1									
81	Myrtaceae	<i>Psidium guajava</i>	පේර	I	NE				1						
82	Myrtaceae	<i>Syzygium caryophyllatum</i>	දං, හීන් දං	N	LC				1	1	1	1	1	1	
83	Ochnaceae	<i>Campylospermum serratum</i>	බෝ කැර	N	LC							1	1		
84	Onagraceae	<i>Ludwigia hyssopifolia</i>		I	NE				1						
85	Oxalidaceae	<i>Biophytum intermedium</i>		N	EN								1		1
86	Oxalidaceae	<i>Oxalis barrelieri</i>		I	NE	1				1			1		1
87	Phyllanthaceae	<i>Aporosa cardiosperma</i>	කැබැල්ල	N	LC					1					
88	Phyllanthaceae	<i>Breynia androgyna</i>	ජපන් බටු	N	LC						1	1	1	1	
89	Phyllanthaceae	<i>Breynia vitis-idaea</i>	ගස් කැසිල	N	LC						1		1	1	

No.	Family	Scientific Name	Common Name	DS	CS	D15	D16	D32	D33	D34	D35	D36	D37	D38	D70
90	Phyllanthaceae	<i>Bridelia moonii</i>	පන් කැල	E	LC						1		1	1	
91	Phyllanthaceae	<i>Phyllanthus amarus</i>	පිටවක්කා	N	NE						1				
92	Piperaceae	<i>Peperomia pellucida</i>	දිය නිප්පිලි	I	NE	1								1	
93	Piperaceae	<i>Piper nigrum</i>	ගම්මිරිස්	I	NE							1		1	
94	Plantaginaceae	<i>Scoparia dulcis</i>	වල් කොත්තමල්ලි	I	NE		1								
95	Poaceae	<i>Cenchrus polystachios</i>		I	NE										1
96	Poaceae	<i>Chrysopogon aciculatus</i>	තුත්තිරි, වන්ද	N	LC										1
97	Poaceae	<i>Cymbopogon nardus</i>	පැහිරි මාන	N	LC					1					
98	Poaceae	<i>Urochloa maxima</i>	ගිණි තණ	I	NE	1									1
99	Rhamnaceae	<i>Ziziphus oenopolia</i>	හීන් එරමිණියා	N	LC			1			1		1	1	1
100	Rhamnaceae	<i>Ziziphus rugosa</i>	මහ එරමිණියා	N	NT								1		
101	Rhizophoraceae	<i>Carallia brachiata</i>	දවට	N	LC							1			
102	Rubiaceae	<i>Coffea arabica</i>	කෝපි	I	NE									1	
103	Rubiaceae	<i>Mussaenda frondosa</i>	මුස්සන්ද	N	LC	1		1					1		1
104	Rubiaceae	<i>Ophiorrhiza mungos</i>	දත් කැටිය	N	LC								1		
105	Rubiaceae	<i>Spermacoce latifolia</i>		I	NE	1		1		1		1			
106	Rubiaceae	<i>Spermacoce ocymifolia</i>		I	NE	1		1					1		
107	Sapindaceae	<i>Allophylus cobbe</i>	කොබ්බෑ	N	LC			1							
108	Sapindaceae	<i>Pometia pinnata</i>	බුලු මොර, කා ඉඹුල්, ගල් මොර	N	LC									1	1
109	Simaroubaceae	<i>Brucea javanica</i>	නින්ත කොහොඹ	N	LC				1					1	
110	Smilacaceae	<i>Smilax perfoliata</i>	මහ කබරස	N	LC									1	
111	Symplocaceae	<i>Symplocos acuminata</i>	බෝඹු	N	LC		1	1	1	1		1	1	1	1
112	Urticaceae	<i>Elatostema lineolatum</i>		N	VU	1									
113	Verbenaceae	<i>Lantana camara</i>	ගඳපාන	I	NE		1	1					1	1	1
114	Verbenaceae	<i>Stachytarpheta jamaicensis</i>	බලුතකුට	I	NE			1		1		1	1		1

No.	Family	Scientific Name	Common Name	DS	CS	D15	D16	D32	D33	D34	D35	D36	D37	D38	D70
115	Vitaceae	<i>Cyphostemma trilobata</i>		N	LC									1	
116	Vitaceae	<i>Leea indica</i>	බුරුල්ල	N	LC						1		1		
117	Zingiberaceae	<i>Curcuma zedoaria</i>	හරක් කහ	I	NE							1	1		

Annex 2b. The list of animal species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **N** - Native, **I** – Introduced. **CS** - Conservation Status (National Conservation Status or * Global Conservation Status); **CR** - Critically Endangered; **DD** - Data Deficient; **EN** – Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** – Vulnerable. **D##**; Sites visited (Table XX).

No.	Family	Scientific Name	Common Name	DS	CS	D15	D16	D32	D33	D34	D35	D36	D37	D38	D70
Dragonflies															
1	Calopterygidae	<i>Vestails nigrescens</i>	Black-tipped flashwing	N	LC*	1							1		
2	Coenagrionidae	<i>Agriocnemis pygmaea</i>	Wandering Wisp	N	LC					1					
3	Platycnemididae	<i>Copera marginipes</i>	Yellow Featherleg	N	LC			1							
4	Platycnemididae	<i>Elattoneura centralis</i>	Dark-glittering Threadtail	E	LC*	1					1				
5	Platystictidae	<i>Ceylonosticta brincki</i>	Brinck's Shadowdamsel	E	LC*	1		1			1	1		1	
6	Platystictidae	<i>Platysticta apicalis</i>	Dark Forestdamsel	E	NT*									1	
7	Platystictidae	<i>Platysticta serendibica</i>	Serendib Forestdamsel	E	NT*	1		1					1		
8	Gomphidae	<i>Heliogomphus walli</i>	Wall's Grappletail	E	NT*	1								1	
9	Libellulidae	<i>Orthetrum glaucum</i>	Asian Skimmer	N	NT									1	
10	Libellulidae	<i>Orthetrum luzonicum</i>	Marsh Skimmer	N	NT	1							1		
11	Libellulidae	<i>Orthetrum sabina</i>	Green Skimmer	N	LC					1			1		
12	Libellulidae	<i>Diplacodes trivialis</i>	Blue Percher	N	LC		1			1					
13	Libellulidae	<i>Neurothemis tullia</i>	Pied Parasol	N	LC				1						
14	Libellulidae	<i>Pantala flavescens</i>	Wandering Glider	N	LC					1					
Butterflies															
1	Papilionidae	<i>Pachliopta aristolochiae</i>	Common Rose	N	LC		1							1	
2	Papilionidae	<i>Graphium teredon</i>	Narrow-banded Bluebottle	N	LC										1
3	Pieridae	<i>Leptosia nina</i>	Psyche	N	LC									1	1
4	Pieridae	<i>Delias eucharis</i>	Jezebel	N	LC					1				1	1
5	Pieridae	<i>Eurema hecabe</i>	Common Grass Yellow	N	LC						1		1	1	

No.	Family	Scientific Name	Common Name	DS	CS	D15	D16	D32	D33	D34	D35	D36	D37	D38	D70
Amphibians															
1	Bufo	<i>Duttaphrynus melanostictus</i>	Common toad	N	LC		1			1					
2	Rana	<i>Indosylvirana temporalis</i>	Bronzed frog	E	NT*	1		1							
3	Dicroglossidae	<i>Nannophrys ceylonensis</i>	Sri Lanka rock frog	E	VU*	1						1		1	
4	Nictibatrachidae	<i>Lankanectes corrugatus</i>	Corrugated water frog	E	NT*	1									
5	Rhacophoridae	<i>Pseudophilautus popularis</i>	Common shrub frog	E	VU*		1								
Reptiles															
1	Agamidae	<i>Calotes calotes</i>	Green forest Lizard	N	LC	1								1	1
2	Agamidae	<i>Calotes versicolor</i>	Garden Lizard	N	LC					1					1
3	Agamidae	<i>Otocryptis wiegmanni</i>	Sri Lankan Kangaroo Lizard	E	LC*						1	1	1	1	
4	Gekkonidae	<i>Cnemaspis silvula</i>	Forest Daygecko	E	LC*									1	
5	Scincidae	<i>Lankascincus fallax</i>	Common Supple Skink	E	LC*								1		1
6	Scincidae	<i>Lankascincus cf. gansi</i>	Gans's Lanka Skink	E	LC*	1									
7	Colubridae	<i>Ptyas mucosa</i>	Sri Lankan Rat Snake	N	LC			1							1
8	Elapidae	<i>Naja naja</i>	Indian Cobra	N	LC*			1							
9	Pythonidae	<i>Python molurus</i>	Rock Python	N	LC			1							
10	Viperidae	<i>Hypnale hypnale</i>	Merrem's Hump-nosed Pit Viper	N	LC*			1							
Birds															
1	Ciconiidae	<i>Anastomus oscitans</i>	Asian Openbill	N	LC										1
2	Phalacrocoracidae	<i>Phalacrocorax niger</i>	Little Cormorant	N	LC								1		
3	Accipitridae	<i>Accipiter badius</i>	Shikra	N	LC								1		
4	Columbidae	<i>Ducula aenea</i>	Green Imperial-Pigeon	N	LC	1		1		1			1		1

No.	Family	Scientific Name	Common Name	DS	CS	D15	D16	D32	D33	D34	D35	D36	D37	D38	D70
5	Columbidae	<i>Treron pompadora</i>	Sri Lanka Green-Pigeon	E	LC				1						
6	Columbidae	<i>Stigmatopelia chinensis</i>	Spotted Dove	N	LC										1
7	Psittacidae	<i>Psittacula cyanocephala</i>	Plum-headed Parakeet	N	NT									1	
8	Psittacidae	<i>Psittacula calthropae</i>	Sri Lanka Emerald-collared Parakeet	E	NT									1	1
9	Psittacidae	<i>Psittacula krameri</i>	Rose-ringed Parakeet	N	LC					1					
10	Psittacidae	<i>Loriculus beryllinus</i>	Sri Lanka Hanging Parrot	E	LC				1			1	1	1	1
11	Cuculidae	<i>Centropus sinensis</i>	Greater Coucal	N	LC	1				1			1		
12	Cuculidae	<i>Cuculus varius</i>	Common Hawk-cuckoo	N	EN										1
13	Apodidae	<i>Cypsiurus balasiensis</i>	Asian Palm-swift	N	LC	1		1					1		
14	Hemiprocnidae	<i>Hemiprocne coronata</i>	Crested Treeswift	N	LC	1								1	
15	Alcedinidae	<i>Halcyon smyrnensis</i>	White-throated Kingfisher	N	LC	1		1	1	1					
16	Bucerotidae	<i>Ocyrceros gingalensis</i>	Sri Lanka Grey Hornbill	E	LC										1
17	Ramphastidae	<i>Megalaima zeylanica</i>	Brown-headed Barbet	N	LC			1							1
18	Ramphastidae	<i>Megalaima rubricapillus</i>	Sri Lanka Barbet	E	LC			1	1		1	1			
19	Ramphastidae	<i>Megalaima flavifrons</i>	Sri Lanka Yellow-fronted Barbet	E	LC	1	1	1	1	1	1	1		1	1
20	Picidae	<i>Dinopium psarodes</i>	Lesser Sri Lanka Flameback	E	LC			1		1					1
21	Picidae	<i>Dendrocopos nanus</i>	Brown-capped Woodpecker	N	LC									1	
22	Aegithinidae	<i>Aegithina tiphia</i>	Common Iora	N	LC										1
23	Campephagidae	<i>Pericrocotus flammeus</i>	Scarlet Minivet	N	LC					1		1			
24	Campephagidae	<i>Hemipus picatus</i>	Bar-winged Flycatcher-shrike	N	LC				1						

No.	Family	Scientific Name	Common Name	DS	CS	D15	D 16	D32	D33	D34	D35	D36	D37	D38	D70
25	Campephagidae	<i>Coracina melanoptera</i>	Black-headed Cuckoo-shrike	N	LC			1							
26	Oriolidae	<i>Oriolus xanthornus</i>	Black-hooded Oriole	N	LC				1						
27	Dicruridae	<i>Dicrurus caerulescens</i>	White-bellied Drongo	N	LC	1		1		1				1	
28	Corvidae	<i>Corvus splendens</i>	House Crow	N	LC					1	1				
29	Corvidae	<i>Corvus levaillantii</i>	Jungle Crow	N	LC			1	1	1		1			1
30	Hirundinidae	<i>Hirundo hyperythra</i>	Sri Lanka swallow	E	LC	1				1					
31	Pycnonotidae	<i>Hypsipetes leucocephalus</i>	Asian Black Bulbul	N	LC	1				1			1	1	1
32	Pycnonotidae	<i>Pycnonotus cafer</i>	Red-vented Bulbul	N	LC			1		1					1
33	Pycnonotidae	<i>Pycnonotus luteolus</i>	White-browed Bulbul	N	LC				1						
34	Pycnonotidae	<i>Iole indica</i>	Yellow-browed Bulbul	N	LC									1	
35	Sylviidae	<i>Orthotomus sutorius</i>	Common Tailorbird	N	LC					1				1	
36	Timaliidae	<i>Turdoides affinis</i>	Yellow-billed Babbler	N	LC				1	1	1				
37	Zosteropidae	<i>Zosterops palpebrosus</i>	Oriental White Eye	N	LC	1		1	1	1		1	1	1	1
38	Sturnidae	<i>Acridotheres tristis</i>	Common Myna	N	LC			1		1					1
39	Sturnidae	<i>Gracula religiosa</i>	Hill Myna	N	LC						1		1	1	
40	Muscicapidae	<i>Copsychus saularis</i>	Oriental Magpie Robin	N	LC		1								
41	Muscicapidae	<i>Cyornis tickelliae</i>	Tickell's Blue Flycatcher	N	LC	1				1	1				
42	Chloropseidae	<i>Chloropsis jerdoni</i>	Jerdon's Leafbird	N	LC					1					
43	Dicaeidae	<i>Dicaeum erythrorhynchos</i>	Pale-billed Flowerpecker	N	LC						1			1	
44	Nectariniidae	<i>Nectarinia zeylonica</i>	Purple-rumped Sunbird	N	LC					1				1	1
Mammals															
1	Manidae	<i>Manis crassicaudata</i>	Pangolin	N	NT			1						1	
2	Megadermatidae	<i>Megaderma spasma</i>	Lesser False Vampire bat	N	VU	1									
3	Pteropodidae	<i>Pteropus giganteus</i>	Flying fox	N	LC				1						
4	Cercopithecidae	<i>Macaca sinica</i>	Sri Lanka toque monkey	E	LC	1		1							

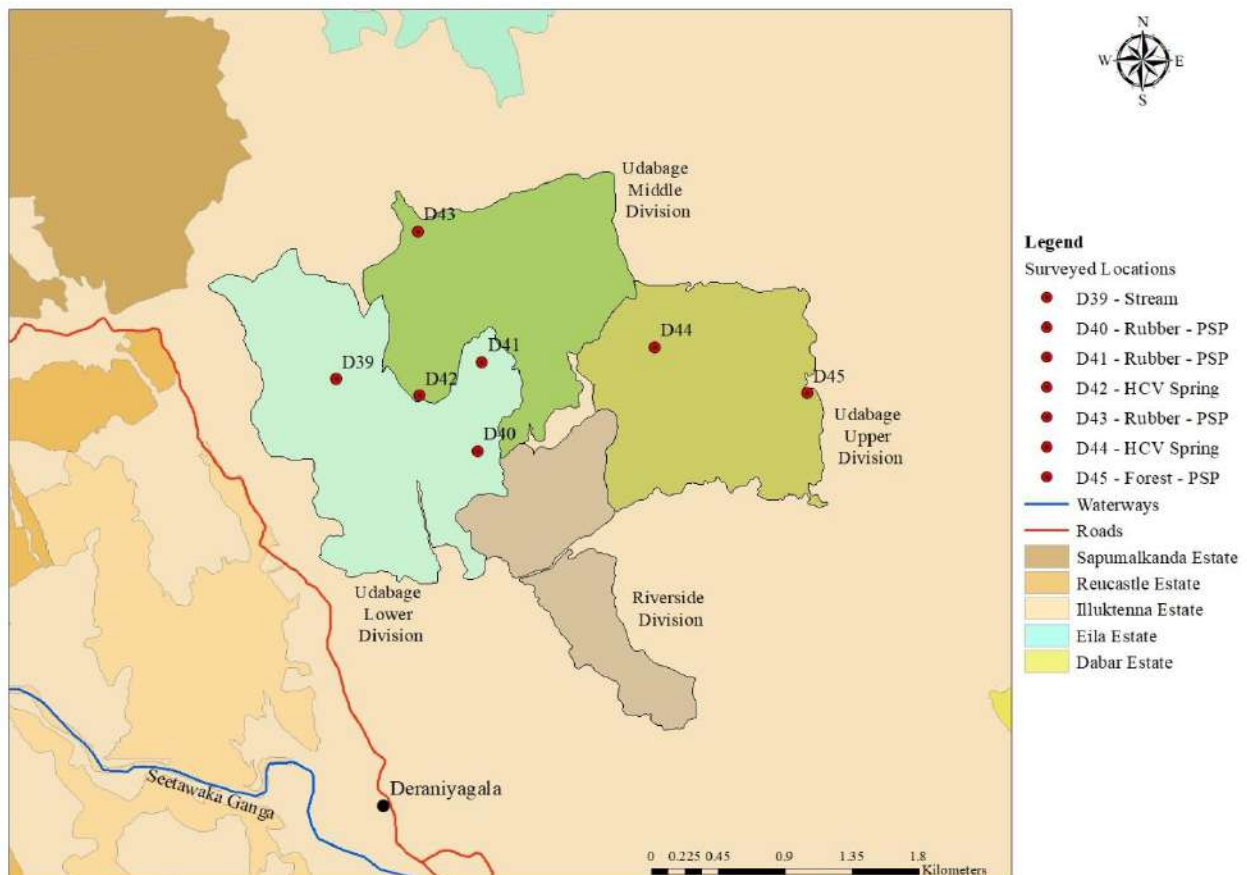
No.	Family	Scientific Name	Common Name	DS	CS	D15	D 16	D32	D33	D34	D35	D36	D37	D38	D70
5	Cervidae	<i>Muntiacus muntjak</i>	Barking deer	N	NT			1							
6	Suidae	<i>Sus scrofa</i>	Wild boar	N	LC			1	1		1			1	1
7	Hystricidae	<i>Hystrix indica</i>	Porcupine	N	LC			1		1		1		1	
8	Sciuridae	<i>Funambulus palmarum</i>	Palm squirrel	N	LC				1						1

Udabage Estate

1. Introduction

Udabage Estate is managed under the Udabage Group of Lalan Rubbers Pvt. Ltd. It is located in the Kegalle District and has a total extent of 796.75 ha. There are four divisions in the estate and the primary crops grown are rubber and oil palm. The extent of conservation areas in the estate is 2.12 ha. There is a conservation forest in the Upper Division and several HCV sites important for the provision of freshwater are also present in the estate.

Udabage estate is located in the wet climatic zone of the country. Ecologically the area is near the conjunction of three floristic zones, i.e., Northern Wet Lowland Floristic Zone, Sinharaja and Rathnapura Floristic Zone and Foothills of Adam's Peak and Ambagamuwa Floristic Zone. The estate is located in the Kelani River basin.



Map of Udabage Estate and the distribution of sampling sites (Table XX).

2. Methodological approach

2.1 Study locations: Altogether, 9 sampling sites were surveyed, 4 in Lower Division, 2 in Middle Division and 3 in Upper Division. These includes one Conservation Forest site, PSPs in Rubber, and a several Springs, Streams and marshes. A summary of locations sampled are given in Table 1 and the distribution of the sampling plots within the Udabage estate is shown in Figure 1.

Table 1. The number of sites sampled within the Udabage Estate

Division	Site	Site type	Site code	Latitude	Longitude	Ele. (m)
Lower	Rubber 1989/ OP 13	Stream	D39	6.95647	80.33347	166
	Rubber 1999	Rubber - PSP	D40	6.95211	80.34207	248
	Rubber 2007	Rubber - PSP	D41	6.95749	80.34232	272
		Stream		6.96437	80.33081	154
Middle	Rubber 1990 HCV springs	Spring	D42	6.95548	80.33853	264
	Rubber 1993	Rubber - PSP	D43	6.96539	80.33842	237
Upper	Rubber 2004 HCV spring	Spring	D44	6.95841	80.35275	346
	Conservation Forest	Forest - PSP	D45	6.95562	80.36201	340
	Marsh	Marsh		6.95629	80.35425	305

2.2 Study Period: This study was undertaken in July 2021 covering the wet season of the area.

2.3 Study techniques: Please refer Chapter 1

3. Key Findings of the Biodiversity Assessment

Based on the results of the assessments conducted in the Udabage estate 102 species of plants and 123 species of animals were recorded. This included 31 species of endemic fauna, 14 species of endemic flora, 16 species of threatened fauna and 8 species of threatened flora. A summary of the species recorded under different taxonomic groups are presented in table 2. The detailed list of plants and animals observed during this study including their distribution and threat status is given in Annex 2a and 2b.

Table 2. Summary of the total fauna and flora recorded during the assessment.

Abbreviations used: **CR** - Critically Endangered; **EN** - Endangered; **VU** – Vulnerable, **NT** - Near Threatened, **DD** – Data Deficient.

Taxa	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Dragonflies	18	7	-	-	2	3	3	-
Butterflies	40	3	-	-	1	2	5	-
Freshwater Fish	7	3	-	-	-	1	3	-
Amphibians	7	5	-	-	-	2	3	-
Reptiles	7	5	-	-	1	1	-	-
Birds	37	6	-	-	-	-	3	-
Mammals	7	0	-	-	1	1	2	-
Sub-Total (Fauna)	123	31	0	0	5	11	20	0
Plants	102	14	35	-	2	6	4	2
Total (Species)	225	45	35	0	7	17	24	2

4. Important Findings of the Assessment

4.1. Critical Species

1. Sri Lanka Ace (*Halpe ceylonica*)

This endemic butterfly is distributed in the mid country to lower montane zone in the wet zone of Sri Lanka. It is a rare species currently considered Endangered but could be locally common where populations occur. The larvae feeds on bamboos. It was recorded in the Conservation forest in the Upper Division of the estate (Site D45).



Sri Lanka Ace. Image: TR

2. *Zeuxine regia* (ඉරු රාජ)

A small endemic herb growing up to 10cm. Grows under the shade of trees in the submontane or mid-country tropical wet evergreen forests among fallen leaves. Flowering in December to January. This orchid, which also has a medicinal value, was observed in the Conservation Forest in The Upper Division of Udabage Estate.



Zeuxine regia. Upper Division. Image: NC

5. Conclusions and Recommendations

Results of the present assessment indicates that the total species richness and the number of endemic and threatened species recorded remains equal or higher in most instances compared to previous survey done in 2016. It should be noted that some of the species recorded during the previous assessments have not been recorded during the present survey and number of new species including endemic and threatened species have been newly recorded during the present assessment. Therefore, based on this data it can be safely concluded that the species richness as well as number of critical species (endemic and threatened species) have not undergone a decline between the two assessments.

Based on the findings of this assessment and the field observations the following set of recommendations can be made.

1. The Upper Division of Udabage Estate has a Conservation Forest demarcated. The forest, is in a good condition and several species of rare and threatened species was reported in this habitat. However, no PSP has been marked in the conservation forest. It is recommended to establish a PSP (Site D45) and monitor the changes in the local biodiversity present.
2. Please refer the list of recommendations in the main report for additional recommendations.

Annex 2a. The list of plant species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **I** - Introduced, **N** - Native. **CS** - Conservation Status (National Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** - Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** - Vulnerable. **D##**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	D39	D40	D41	D42	D43	D44	D45
1	Acanthaceae	<i>Asystasia gangetica</i>	පුරුක්	N	LC					1		
2	Acanthaceae	<i>Asystasia variabilis</i>	ගඳ පුරුක්	N	LC	1			1			
3	Acanthaceae	<i>Strobilanthes adenophora</i>	තෙළු	E	VU					1		
4	Anacardiaceae	<i>Nothopegia beddomei</i>	බල	N	LC							1
5	Annonaceae	<i>Artabotrys zeylanicus</i>	කළු බඹර වැල්	N	LC					1		
6	Annonaceae	<i>Uvaria semecarpifolia</i>	කර බඹර	E	LC							1
7	Apocynaceae	<i>Alstonia macrophylla</i>	හවරි නුග	I	NE		1	1		1		
8	Apocynaceae	<i>Alstonia scholaris</i>	රුක් අත්තන	N	LC	1		1	1		1	
9	Apocynaceae	<i>Anodendron parviflorum</i>	දුල්, ගැරඩි දුල්	N	VU		1		1	1	1	
10	Apocynaceae	<i>Tabernaemontana dichotoma</i>	දිවි කදුරු	E	LC					1	1	
11	Araceae	<i>Pothos scandens</i>	පෝටා වැල්	N	LC							1
12	Arecaceae	<i>Areca catechu</i>	පුවක්	I	NE		1					
13	Arecaceae	<i>Caryota urens</i>	කිතුල්	N	LC	1		1		1		1
14	Asteraceae	<i>Acmella uliginosa</i>	හීන් අක්මැල්ල	N	LC		1					
15	Asteraceae	<i>Ageratum conyzoides</i>	හුලන්නළා	I	NE		1					1
16	Asteraceae	<i>Centratherum punctatum</i>		I	NE				1			
17	Asteraceae	<i>Chromolaena odorata</i>	පොඩි සිඤ්ඤොමරන්	I	NE	1	1	1		1	1	
18	Asteraceae	<i>Crassocephalum crepidioides</i>		I	NE					1	1	
19	Asteraceae	<i>Cyanthillium cinereum</i>	මොණරකුඩුමිබිය	N	LC	1	1	1				
20	Asteraceae	<i>Emilia sonchifolia</i>	කඩුපහර	N	LC				1			
21	Asteraceae	<i>Mikania cordata</i>	වතු පාළු	I	NE	1						
22	Asteraceae	<i>Sphagneticola trilobata</i>	උදය කුමාරි	I	NE	1	1		1	1	1	
23	Balsaminaceae	<i>Impatiens flaccida</i>	කුඩළු	N	NT					1		

	Family	Scientific Name	Common Name	DS	CS	D39	D40	D41	D42	D43	D44	D45
24	Bignoniaceae	<i>Crescentia cujete</i>	රම්	I	NE				1			
25	Calophyllaceae	<i>Calophyllum inophyllum</i>	දොඹ	N	LC						1	
26	Calophyllaceae	<i>Mesua ferrea</i>	තා, තාග	N	LC			1				
27	Campanulaceae	<i>Hippobroma longiflora</i>		I	NE		1					
28	Campanulaceae	<i>Lobelia zeylanica</i>		N	LC							1
29	Cannabaceae	<i>Trema orientale</i>	ගඬුඹ	N	LC	1						
30	Centroplacaceae	<i>Bhesa ceylanica</i>	පෙලන්	E	LC							1
31	Convolvulaceae	<i>Camonea pilosa</i>	කීර් මදු, මහ මදු	N	LC					1		
32	Costaceae	<i>Hellenia speciosa</i>	තෙඹු	N	LC							1
33	Dilleniaceae	<i>Dillenia suffruticosa</i>	පර	I	NE	1			1			
34	Dilleniaceae	<i>Schumacheria castaneifolia</i>	මහ කකීර්වරා	E	LC					1		
35	Dilleniaceae	<i>Tetracera sarmentosa</i>	කොරොස වැල්	N	LC	1	1			1		1
36	Euphorbiaceae	<i>Euphorbia hirta</i>	බු දද කීරිය, කීර් තලා	I	NE		1					
37	Euphorbiaceae	<i>Macaranga peltata</i>	කැන්ද	N	LC	1	1	1	1	1	1	
38	Euphorbiaceae	<i>Mallotus tetracoccus</i>	බු කැන්ද	N	LC			1				
39	Fabaceae	<i>Grona heterocarpa</i>	අන් උදුපියලිය	N	VU	1		1		1	1	
40	Fabaceae	<i>Grona heterophylla</i>	මහ උදුපියලිය	N	LC		1					
41	Fabaceae	<i>Humboldtia laurifolia</i>	ගල් කරද	E	LC					1		
42	Fabaceae	<i>Mimosa pudica</i>	නිදිකුම්බා	I	NE		1					
43	Fabaceae	<i>Mucuna bracteata</i>	මුකුණ	I	NE		1	1				
44	Fabaceae	<i>Neustanthus phaseoloides</i>	පෝර වැල්	I	NE	1				1		
45	Fabaceae	<i>Senegalia caesia</i>	හිඹුරු	N	LC					1		
46	Fabaceae	<i>Senna alata</i>	අන් තෝර	I	NE				1			
47	Fabaceae	<i>Senna hirsuta</i>		I	NE		1					
48	Lamiaceae	<i>Clerodendrum infortunatum</i>	ගස් පින්න, පින්න	N	LC							1
49	Lamiaceae	<i>Clerodendrum paniculatum</i>	පින්න	I	NE		1					
50	Lamiaceae	<i>Hyptis capitata</i>		I	NE		1					

	Family	Scientific Name	Common Name	DS	CS	D39	D40	D41	D42	D43	D44	D45
51	Lamiaceae	<i>Orthosiphon aristatus</i>		I	NE					1		
52	Lauraceae	<i>Cinnamomum dubium</i>	සෙවෙල් කුරුඳු	N	NT	1						1
53	Lauraceae	<i>Cinnamomum verum</i>	කුරුඳු, පත් කුරුඳු	E	VU				1	1		
54	Lauraceae	<i>Litsea longifolia</i>	රත් කැලිය	E	DD							1
55	Lentibulariaceae	<i>Utricularia bifida</i>	කහ ඉන්දිත් තරු	N	NT				1			
56	Malvaceae	<i>Sida acuta</i>	ගස් බැබිල	N	LC						1	
57	Malvaceae	<i>Urena lobata</i>	පව්ව ඇපල	N	LC	1	1	1			1	
58	Malvaceae	<i>Ceiba pentandra</i>	කොට්ට පුලුන්	I	NE		1					
59	Malvaceae	<i>Microcos paniculata</i>	කොහු කිරිල්ල	N	LC							1
60	Melastomataceae	<i>Heterotis rotundifolia</i>		I	NE	1				1		
61	Melastomataceae	<i>Melastoma malabathricum</i>	මහ බෝවිටියා	N	LC	1	1	1				
62	Melastomataceae	<i>Miconia crenata</i>	කටකළු බෝවිටියා	I	NE	1	1	1			1	
63	Melastomataceae	<i>Osbeckia octandra</i>	හීන් බෝවිටියා	E	LC		1		1			
64	Meliaceae	<i>Melia azedarach</i>	ලුණුමිදෙල්ල	I	DD							1
65	Monimiaceae	<i>Hortonia angustifolia</i>	නයිපන් වැවිය	E	VU					1		
66	Moraceae	<i>Ficus diversiformis</i>		E	LC						1	
67	Moraceae	<i>Ficus exasperata</i>	බු තෙදිය	N	LC	1			1		1	
68	Moraceae	<i>Ficus hispida</i>	කොට දිඹුල	N	LC					1	1	1
69	Moraceae	<i>Ficus tsjakela</i>	කිරිපෙල්ල	N	LC		1					
70	Myrtaceae	<i>Psidium guajava</i>	ජේර	I	NE		1					
71	Myrtaceae	<i>Syzygium caryophyllatum</i>	දං, හීන් දං	N	LC	1	1		1			
72	Myrtaceae	<i>Syzygium samarangense</i>	පිනි ජම්බු	I	NE				1			
73	Ochnaceae	<i>Campylospermum serratum</i>	බෝ කැර	N	LC					1		
74	Onagraceae	<i>Ludwigia hyssopifolia</i>		I	NE	1						
75	Orchidaceae	<i>Dendrobium macrostachyum</i>	පොසොන් මල්	N	LC							1
76	Orchidaceae	<i>Luisia zeylanica</i>		N	LC							1
77	Orchidaceae	<i>Zeuxine regia</i>	ඉරුරාජ	E	EN							1

	Family	Scientific Name	Common Name	DS	CS	D39	D40	D41	D42	D43	D44	D45
78	Oxalidaceae	<i>Biophytum intermedium</i>		N	EN		1					
79	Oxalidaceae	<i>Oxalis barrelieri</i>		I	NE						1	
80	Phyllanthaceae	<i>Aporosa cardiosperma</i>	කබැල්ල	N	LC					1		
81	Phyllanthaceae	<i>Breynia androgyna</i>	ජපන් බටු	N	LC				1	1		
82	Phyllanthaceae	<i>Breynia vitis-idaea</i>	ගස් කයිල	N	LC		1				1	
83	Phyllanthaceae	<i>Bridelia moonii</i>	පත් කැල	E	LC	1			1	1		1
84	Phyllanthaceae	<i>Phyllanthus amarus</i>	පිටවක්කා	N	NE	1						
85	Piperaceae	<i>Piper nigrum</i>	ගම්මිරිස්	I	NE							1
86	Poaceae	<i>Bambusa vulgaris</i>	කහ උණ	I	NE		1		1		1	
87	Poaceae	<i>Ochlandra stridula</i>	බට	E	LC					1		1
88	Rhamnaceae	<i>Ziziphus oenopolia</i>	හීන් එරමිණියා	N	LC		1					
89	Rhamnaceae	<i>Ziziphus rugosa</i>	මහ එරමිණියා	N	NT						1	
90	Rubiaceae	<i>Mussaenda frondosa</i>	මුස්සන්ද	N	LC					1	1	
91	Rubiaceae	<i>Ophiorrhiza mungos</i>	දන් කැටිය	N	LC						1	
92	Rubiaceae	<i>Spermacoce latifolia</i>		I	NE		1	1			1	
93	Rubiaceae	<i>Spermacoce ocyimifolia</i>		I	NE			1	1		1	
94	Rutaceae	<i>Citrus x aurantiifolia</i>	දෙහි, හීන් දෙහි, උඩු දෙහි	I	NE		1					
95	Rutaceae	<i>Toddalia asiatica</i>	කුඩුමිරිස්ස	N	LC						1	
96	Sapindaceae	<i>Pometia pinnata</i>	බුලු මොර, නා ඉඹුල්, ගල් මොර	N	LC							1
97	Simaroubaceae	<i>Brucea javanica</i>	නින්ත කොහොඹ	N	LC						1	
98	Symplocaceae	<i>Symplocos acuminata</i>	බෝඹු	N	LC	1	1	1	1	1	1	1
99	Thymelaeaceae	<i>Gyrinops walla</i>	වල්ල පට්ට	N	VU					1		
100	Verbenaceae	<i>Lantana camara</i>	ගදපාන	I	NE		1		1			
101	Verbenaceae	<i>Stachytarpheta jamaicensis</i>	බලුනකුට	I	NE		1		1		1	
102	Vitaceae	<i>Leea indica</i>	බුරුල්ල	N	LC						1	1

Annex 2b. The list of animal species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **N** - Native, **I** – Introduced, **M** - Migrant. **CS** - Conservation Status (National Conservation Status or * Global Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** – Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** – Vulnerable. **D##**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	D39	D40	D41	D42	D43	D44	D45
Dragonflies												
1	Calopterygidae	<i>Vestails nigrescens</i>	Black-tipped flashwing	N	LC*	1					1	1
2	Euphaeidae	<i>Euphaea splendens</i>	Shining Gossamerwing	E	LC*							1
3	Platycnemididae	<i>Copera marginipes</i>	Yellow Featherleg	N	LC		1		1			
4	Platycnemididae	<i>Elattoneura centralis</i>	Dark-glittering Threadtail	E	LC*			1		1		1
5	Platystictidae	<i>Ceylonosticta brincki</i>	Brinck's Shadowdamsel	E	LC*					1		1
6	Platystictidae	<i>Ceylonosticta lankanensis</i>	Drooping Shadowdamsel	E	LC*						1	1
7	Platystictidae	<i>Ceylonosticta cf. tropica</i>	Dark-shouldered Cornuted Shadowdamsel	E	EN*						1	
8	Platystictidae	<i>Platysticta serendibica</i>	Serendib Forestdamsel	E	NT*							1
9	Gomphidae	<i>Paragomphus henryi</i>	Brook Hooktail	E	NT*							
10	Synthemistidae	<i>Macromidia donaldi</i>	Forest Shadow-emerald	N	EN*							1
11	Libellulidae	<i>Tetrathemis yerburii</i>	Yerbury's Elf	E	VU*				1			
12	Libellulidae	<i>Orthetrum chrysis</i>	Spine-tufted Skimmer	N	VU				1			
13	Libellulidae	<i>Orthetrum glaucum</i>	Asian Skimmer	N	NT	1						
14	Libellulidae	<i>Orthetrum luzonicum</i>	Marsh Skimmer	N	NT	1						
15	Libellulidae	<i>Orthetrum pruinosum</i>	Pink Skimmer	N	LC							
16	Libellulidae	<i>Neurothemis tullia</i>	Pied Parasol	N	LC	1						
17	Libellulidae	<i>Trithemis festiva</i>	Indigo Dropwing	N	VU	1			1			
18	Libellulidae	<i>Zygonyx iris</i>	Sri Lanka Cascader	N	LC*					1		
Butterflies												

	Family	Scientific Name	Common Name	DS	CS	D39	D40	D41	D42	D43	D44	D45
1	Papilionidae	<i>Papilio polymnestor</i>	Blue Mormon	N	LC	1					1	1
2	Papilionidae	<i>Papilio clytia</i>	Mime	N	LC							1
3	Papilionidae	<i>Graphium teredon</i>	Narrow-banded Bluebottle	N	LC						1	
4	Papilionidae	<i>Graphium agamemnon</i>	Tailed Jay	N	LC							1
5	Pieridae	<i>Leptosia nina</i>	Psyche	N	LC					1	1	
6	Pieridae	<i>Catopsilia pomona</i>	Lemon Emigrant	N	LC						1	
7	Pieridae	<i>Eurema hecabe</i>	Common Grass Yellow	N	LC				1		1	
8	Pieridae	<i>Eurema blanda</i>	Three-Spot Grass Yellow	N	LC					1		
9	Pieridae	<i>Eurema ormistoni</i>	Sri Lankan One-Spot Grass Yellow	E	VU							1
10	Nymphalidae	<i>Parantica aglea</i>	Glassy Tiger	N	LC					1		1
11	Nymphalidae	<i>Euploea core</i>	Common Crow	N	LC						1	
12	Nymphalidae	<i>Phalanta phalantha</i>	Common Leopard	N	LC							1
13	Nymphalidae	<i>Junonia atlites</i>	Grey Pansy	N	LC				1			1
14	Nymphalidae	<i>Junonia iphita</i>	Chocolate Soldier	N	LC		1		1			1
15	Nymphalidae	<i>Pantoporia hordonia</i>	Common Lascar	N	NT							1
16	Nymphalidae	<i>Neptis hylas</i>	Common Sailor	N	LC						1	1
17	Nymphalidae	<i>Neptis jumbah</i>	Chestnut Streaked Sailor	N	LC							1
18	Nymphalidae	<i>Parthenos sylvia</i>	Clipper	N	LC							1
19	Nymphalidae	<i>Melanitis phedima</i>	Dark Evening Brown	N	NT							1
20	Nymphalidae	<i>Orsotriaena medus</i>	Medus Brown	N	LC	1		1	1			
21	Nymphalidae	<i>Mycalesis mineus</i>	Dark-Brand Bushbrown	N	LC				1			
22	Nymphalidae	<i>Ypthima ceylonica</i>	White Four-ring	N	LC	1	1	1	1			
23	Lycaenidae	<i>Nacaduba hermus</i>	Pale Four Lineblue	N	NT							1
24	Lycaenidae	<i>Jamides bochus</i>	Dark Cerulean	N	LC							1
25	Lycaenidae	<i>Jamides celeno</i>	Common Cerulean	N	LC		1	1		1		
26	Lycaenidae	<i>Discolampa ethion</i>	Banded Blue Pierrot	N	LC							1
27	Lycaenidae	<i>Caleta decidia</i>	Angled Pierrot	N	LC		1					1

	Family	Scientific Name	Common Name	DS	CS	D39	D40	D41	D42	D43	D44	D45
28	Lycaenidae	<i>Acytolepis puspa</i>	Common Hedge Blue	N	LC		1					
29	Lycaenidae	<i>Chilades pandava</i>	Plains Cupid	N	LC		1					
30	Lycaenidae	<i>Chilades lajus</i>	Lime Blue	N	LC		1					
31	Riodinidae	<i>Abisara echerius</i>	Plum Judy	N	LC						1	1
32	Hesperiidae	<i>Hasora chromus</i>	Common Banded Awl	N	LC						1	
33	Hesperiidae	<i>Spialia galba</i>	Grizzled Skipper	N	LC					1		
34	Hesperiidae	<i>Ampittia dioscorides</i>	Bush Hopper	N	LC						1	
35	Hesperiidae	<i>Halpe ceylonica</i>	Sri Lankan Ace	E	EN							1
36	Hesperiidae	<i>Iambrix salsala</i>	Chestnut Bob	N	LC	1		1	1	1	1	1
37	Hesperiidae	<i>Oriens goloides</i>	Common Dartlet	N	NT					1		
38	Hesperiidae	<i>Potanthus satra</i>	Sri Lankan Dart/Tropic dart	E	LC						1	
39	Hesperiidae	<i>Pelopidas agna</i>	Little Branded Swift	N	NT				1	1	1	1
40	Hesperiidae	<i>Pelopidas conjuncta</i>	Conjoined Swift	N	VU	1				1		
Freshwater Fish												
1	Cyprinidae	<i>Dawkinsia filamentosa</i>	Sri Lanka Filamented Barb	N	LC							
2	Cyprinidae	<i>Garra ceylonensis</i>	Sri Lanka Stone Sucker	E	NT							1
3	Cyprinidae	<i>Systemus pleurotaenia</i>	Sri Lanka Black-Lined Barb	E	VU							
4	Danionidae	<i>Devario malabaricus</i>	Giant Danio	N	LC	1						1
5	Nemacheilidae	<i>Schistura notostigma</i>	Sri Lanka Banded Mountain Loach	E	NT							1
6	Channidae	<i>Channa kelaartii</i>	Brown Snakehead	N	NT	1						
7	Channidae	<i>Channa orientalis</i>	Smooth-Breasted Snakehead	E	VU							1
Amphibians												
1	Bufonidae	<i>Duttaphrynus melanostictus</i>	Common toad	N	LC							1
2	Ranidae	<i>Indosylvirana temporalis</i>	Bronzed frog	E	NT*							1
3	Dicroglossidae	<i>Minervarya agricola</i>	Common paddy field frog	N	LC							1
4	Dicroglossidae	<i>Minervarya kirtisinghei</i>	Kirtisinghe's frog	E	NT*							1
5	Nictibatrachidae	<i>Lankanectes corrugatus</i>	Corrugated water frog	E	NT*		1					1

	Family	Scientific Name	Common Name	DS	CS	D39	D40	D41	D42	D43	D44	D45
6	Rhacophoridae	<i>Pseudophilautus folicola</i>	Leaf dwelling shrub frog	E	VU*							1
7	Rhacophoridae	<i>Pseudophilautus popularis</i>	Common shrub frog	E	VU*				1			1
Reptiles												
1	Agamidae	<i>Calotes calotes</i>	Green forest Lizard	N	LC	1	1			1		
2	Agamidae	<i>Lyriocephalus scutatus</i>	Hump-nosed Lizard	E	VU*							1
3	Agamidae	<i>Otocryptis wiegmanni</i>	Sri Lankan Kangaroo Lizard	E	LC*							1
4	Gekkonidae	<i>Cnemaspis molligodai</i>	Molligoda's Daygecko	E	EN*							1
5	Gekkonidae	<i>Cnemaspis silvula</i>	Forest Daygecko	E	LC*							1
6	Scincidae	<i>Lankascincus cf. gansi</i>	Gans's Lanka Skink	E	LC*							1
7	Viperidae	<i>Hypnale hypnale</i>	Merrem's Hump-nosed Pit Viper	N	LC*					1		
Birds												
1	Accipitridae	<i>Ictinaetus malayensis</i>	Black Eagle	N	NT						1	
2	Accipitridae	<i>Spizaetus cirrhatus</i>	Changeable Hawk-eagle	N	LC						1	
3	Columbidae	<i>Chalcophaps indica</i>	Emerald Dove	N	LC	1	1	1				1
4	Columbidae	<i>Ducula aenea</i>	Green Imperial-Pigeon	N	LC		1			1		
5	Columbidae	<i>Stigmatopelia chinensis</i>	Spotted Dove	N	LC	1	1		1			
6	Psittacidae	<i>Psittacula cyanocephala</i>	Plum-headed Parakeet	N	NT	1	1	1				
7	Psittacidae	<i>Psittacula calthropae</i>	Sri Lanka Emerald-collared Parakeet	E	NT		1	1				
8	Psittacidae	<i>Loriculus beryllinus</i>	Sri Lanka Hanging Parrot	E	LC		1	1	1	1	1	
9	Cuculidae	<i>Centropus sinensis</i>	Greater Coucal	N	LC	1						
10	Apodidae	<i>Cypsiurus balasiensis</i>	Asian Palm-swift	N	LC		1					
11	Alcedinidae	<i>Halcyon smyrnensis</i>	White-throated Kingfisher	N	LC		1			1	1	
12	Ramphastidae	<i>Megalaima zeylanica</i>	Brown-headed Barbet	N	LC		1	1				
13	Ramphastidae	<i>Megalaima rubricapillus</i>	Sri Lanka Barbet	E	LC		1		1	1		
14	Ramphastidae	<i>Megalaima flavifrons</i>	Sri Lanka Yellow-fronted Barbet	E	LC		1	1	1	1	1	1

	Family	Scientific Name	Common Name	DS	CS	D39	D40	D41	D42	D43	D44	D45
15	Picidae	<i>Dinopium psarodes</i>	Lesser Sri Lanka Flameback	E	LC			1				
16	Picidae	<i>Dendrocopos nanus</i>	Brown-capped Woodpecker	N	LC	1						
17	Aegithinidae	<i>Aegithina tiphia</i>	Common Iora	N	LC	1						1
18	Campephagidae	<i>Pericrocotus flammeus</i>	Scarlet Minivet	N	LC						1	1
19	Campephagidae	<i>Pericrocotus cinnamomeus</i>	Small Minivet	N	LC	1						1
20	Campephagidae	<i>Coracina melanoptera</i>	Black-headed Cuckoo-shrike	N	LC						1	
21	Dicruridae	<i>Dicrurus caerulescens</i>	White-bellied Drongo	N	LC		1					1
22	Rhipiduridae	<i>Rhipidura aureola</i>	White-browed Fantail	N	LC	1	1		1			
23	Hirundinidae	<i>Hirundo hyperythra</i>	Sri Lanka swallow	E	LC	1			1			
24	Pycnonotidae	<i>Hypsipetes leucocephalus</i>	Asian Black Bulbul	N	LC			1	1	1	1	1
25	Pycnonotidae	<i>Pycnonotus cafer</i>	Red-vented Bulbul	N	LC	1	1	1	1	1		
26	Pycnonotidae	<i>Pycnonotus luteolus</i>	White-browed Bulbul	N	LC				1			
27	Pycnonotidae	<i>Iole indica</i>	Yellow-browed Bulbul	N	LC		1	1	1	1	1	1
28	Sylviidae	<i>Orthotomus sutorius</i>	Common Tailorbird	N	LC		1	1	1		1	1
29	Timaliidae	<i>Turdoides affinis</i>	Yellow-billed Babbler	N	LC		1					
30	Zosteropidae	<i>Zosterops palpebrosus</i>	Oriental White Eye	N	LC	1	1	1	1	1	1	1
31	Sturnidae	<i>Acridotheres tristis</i>	Common Myna	N	LC		1		1	1		
32	Sturnidae	<i>Gracula religiosa</i>	Hill Myna	N	LC							1
33	Chloropseidae	<i>Chloropsis aurifrons</i>	Golden Fronted Leafbird	N	LC		1					
34	Chloropseidae	<i>Chloropsis jerdoni</i>	Jerdon's Leafbird	N	LC		1					
35	Dicaeidae	<i>Dicaeum erythrorhynchos</i>	Pale-billed Flowerpecker	N	LC	1	1		1	1		1
36	Nectariniidae	<i>Nectarinia zeylonica</i>	Purple-rumped Sunbird	N	LC			1				
37	Estrildidae	<i>Lonchura punctulata</i>	Scaly-breasted Munia	N	LC				1			
Mammals												
1	Manidae	<i>Manis crassicaudata</i>	Pangolin	N	NT						1	
2	Cervidae	<i>Muntiacus muntjak</i>	Barking deer	N	NT						1	
3	Suidae	<i>Sus scrofa</i>	Wild boar	N	LC		1	1	1		1	1

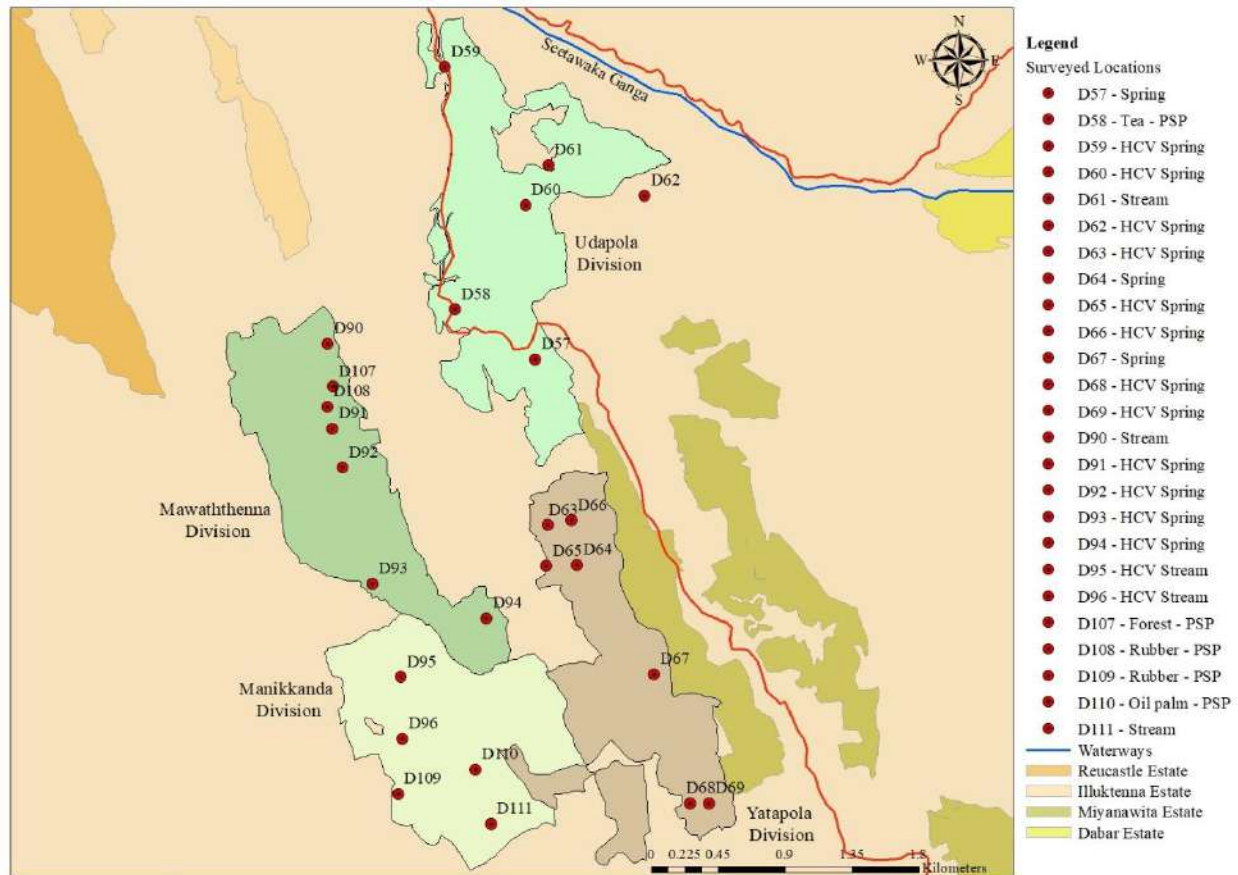
	Family	Scientific Name	Common Name	DS	CS	D39	D40	D41	D42	D43	D44	D45
4	Hystricidae	<i>Hystrix indica</i>	Porcupine	N	LC		1	1			1	1
5	Sciuridae	<i>Funambulus palmarum</i>	Palm squirrel	N	LC						1	
6	Mustelidae	<i>Lutra lutra</i>	Otter	N	VU	1						1
7	Felidae	<i>Prionailurus viverrinus</i>	Fishing cat	N	EN			1				

Udapola Estate

1. Introduction

Udapola Estate is managed under the Udapola Group of Lalan Rubbers Pvt. Ltd. It is located in the Kegalle District and has a total extent of 720 ha. There are four divisions in the estate and the primary crops grown are rubber, oil palm and cinnamon. The extent of conservation areas in the estate is 32.41 ha. There is a conservation forest in the Mawaththanne Division and a number of HCV sites important for the provision of freshwater are also present in the estate.

Udapola estate is located in the wet climatic zone of the country. Ecologically the area is near the conjunction of three floristic zones, i.e., Northern Wet Lowland Floristic Zone, Sinharaja and Rathnapura Floristic Zone and Foothills of Adam’s Peak and Ambagamuwa Floristic Zone. The estate is located in the Kelani River basin and Seethawaka Ganga, a tributary of the Kelani River, flows north of the estate.



Map of Udapola Estate and the distribution of sampling sites (Table XX).

2. Methodological approach

2.1 Study locations: Altogether, 8 sampling sites were surveyed, 7 in Udapola Division and 1 in Udahenkanda Division. These includes one Conservation Forest site, PSPs in Rubber and Cinnamon fields and two Stream sites. A summary of locations sampled are given in Table 1 and the distribution of the sampling plots within the Udapola estate is shown in Figure 1.

Table 1. The number of sites sampled within the Udapola Estate

Division	Site	Site type	Site code	Latitude	Longitude	Ele. (m)
Udapola	Cinnamon 2019	Spring	D57	6.90169	80.34709	161
	Tea 1993	Tea - PSP	D58	6.90470	80.34222	125
	Rubber 1999 HCV spring	Spring	D59	6.91936	80.34162	108
	Rubber 2007 HCV spring	Spring	D60	6.91100	80.34648	107
	Paladeniya Ela	Stream	D61	6.91345	80.34786	86
	Paladeniya Cinnamon HCV	Spring	D62	6.91158	80.35371	164
Yatapola	Rubber 2000/2012 HCV spring	Spring	D63	6.89167	80.34785	158
	Rubber 1999	Spring	D64	6.88925	80.34959	165
	Rubber 2000/1999 HCV spring	Spring	D65	6.88918	80.34776	134
	Rubber 2000 HCV spring	Spring	D66	6.89195	80.34925	218
	Rubber 1997	Spring	D67	6.88264	80.35426	281
	Rubber 1987 HCV spring	Spring	D68	6.87484	80.35646	347
	Rubber 1987 HCV spring	Spring	D69	6.87484	80.35760	390
Mawaththanne	Rubber 2008	Stream	D90	6.90264	80.33451	261
	Rubber 1999 HCV Spring	Spring	D91	6.89749	80.33481	260
	Rubber 2006 HCV Spring	Spring	D92	6.89513	80.33543	262
	Rubber 2010 HCV Spring	Spring	D93	6.88812	80.33723	216
	Rubber 1998 HCV Spring	Spring	D94	6.88603	80.34411	166
	Conservation Forest	Forest - PSP	D107	6.90005	80.33483	272
	Rubber 1999	Rubber - PSP	D108	6.89883	80.33450	261
Mannikkanda	Rubber 2008	Rubber - PSP	D109	6.87541	80.33877	190
	OP4	Oil palm - PSP	D110	6.87688	80.34347	302
	OP5	Stream	D111	6.87360	80.34441	269
	Rubber 2007 HCV Stream	Stream	D95	6.88247	80.33892	224

	Rubber 2011 HCV Stream	Stream	D96	6.87874	80.33904	198
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2.2 Study Period: This study was undertaken in January 2022 covering the dry season of the area and the bird migratory period.

2.3 Study techniques: Please refer Chapter 1

3. Key Findings of the Biodiversity Assessment

Based on the results of the assessments conducted in the Udapola estate 195 species of plants and 182 species of animals were recorded. This included 45 species of endemic fauna, 17 species of endemic flora, 24 species of threatened fauna and 16 species of threatened flora. A summary of the species recorded under different taxonomic groups are presented in table 2. The detailed list of plants and animals observed during this study including their distribution and threat status is given in Annex 2a and 2b.

Table 2. Summary of the total fauna and flora recorded during the assessment.

Abbreviations used: **CR** - Critically Endangered; **EN** - Endangered; **VU** - Vulnerable, **NT** - Near Threatened, **DD** - Data Deficient.

Taxa	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Dragonflies	27	14	-	-	2	7	6	-
Butterflies	45	5	-	-	-	2	5	-
Freshwater Fish	15	7	-	1	-	5	3	-
Amphibians	9	5	-	-	-	2	3	-
Reptiles	11	4	-	-	1	-	-	1
Birds	63	8	4*	-	1	-	5	-
Mammals	12	2	-	-	2	1	2	-
Sub-Total (Fauna)	182	45	0	1	6	17	24	1
Plants	195	17	68	-	2	14	9	2
Total (Species)	377	62	68	1	8	31	33	3

4. Important Findings of the Assessment

4.1. Critical Species

1. Asoka Barb (*Systomus asoka*)

An endemic freshwater fish species that is restricted to the Kelani river basin of Sri Lanka. It inhabits medium to large water ways with sandy or gravel substrate and a moderate flow. Adults are usually found in 1 or 2 meter deep water and juveniles usually shoal together in much shallower water. Asoka Barb was observed in Paladeniya Stream flowing at the boundary of Udapola Division (Site D61).



Asoka Barb. Udapola Division. Image: AS

2. Sri Lanka Black Ruby Barb (*Pethia nigrofasciata*)

This endemic fish can be found in medium to large, shaded streams with a substrate of pebbles. They are omnivorous and occupy the middle water column. Males are colorful than the females and juveniles can be found in shallow parts of the streams near the banks. It is an Endangered species and was observed in Paladeniya Ela (Site D61).



Sri Lanka Black Ruby Barb. Image: TR

2. *Bonamia semidigyna* (බු වස නෙල් කොළ)

These native vines grow at fairly low altitudes, usually from sea level to about 700–800 feet. Plants have been found on the edges of secondary forests, thickets, hedges, waysides and riverbanks throughout its range. This is an Endangered species, and it was recorded in a stream habitat in the 2008 Rubber field in Mawaththanne Division.



Bonamia semidigyna. Image: NC

4.2. Critical Habitats

1. Paladeniya Ela

Paladeniya Ela is a large stream running along the boundary of Udapola Division of the estate. This is an important habitat for many freshwater fish and other aquatic or semi-aquatic species. Threatened and endemic freshwater fishes Asoka Barb and Black Ruby Barb, as well as dragonflies Lieftinck's Sprite and Sri Lanka Cruiser were reported in the stream at Site D61. In addition to these, the dragonfly Aggressive Riverhawk and the Freshwater Gar Fish were reported only at this site during the present round of surveys.



Paladeniya Ela at Site D61. Udapola Division.

5. Conclusions and Recommendations

Results of the present assessment indicates that the total species richness and the number of endemic and threatened species recorded remains equal or higher in most instances compared to previous survey done in 2016. It should be noted that some of the species recorded during the previous assessments have not been recorded during the present survey and number of new species including endemic and threatened species have been newly recorded during the present assessment. Therefore, based on this data it can be safely concluded that the species richness as well as number of critical species (endemic and threatened species) have not undergone a decline between the two assessments.

Based on the findings of this assessment and the field observations the following set of recommendations can be made.

1. The Paladeniya Ela which runs along the boundary of the Udapola Division of the estate is a critical habitat for the local aquatic biodiversity. Enhanced conservation measures to protect this stream and other waterways running into it, would be of immense importance for both biodiversity and people.
2. Please refer the list of recommendations in the main report for additional recommendations.

Annex 2a.1. The list of plant species recorded in Udapola and Yatapola Divisions during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **I** - Introduced, **N** - Native. **CS** - Conservation Status (National Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** - Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** - Vulnerable. **D##**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	D57	D58	D59	D60	D61	D62	D63	D64	D65	D66	D67	D68	D69
1	Acanthaceae	<i>Asystasia gangetica</i>	පුරක්	N	LC				1									
2	Acanthaceae	<i>Asystasia variabilis</i>	ගඳ පුරක්	N	LC				1				1		1		1	
3	Acanthaceae	<i>Hygrophila ringens</i>	නිල් පුරක්	N	LC													
4	Acanthaceae	<i>Nicotaba betonica</i>	සුදු පුරක්	N	LC				1									
5	Acanthaceae	<i>Phaulopsis dorsiflora</i>		N	NT													
6	Acanthaceae	<i>Rungia latior</i>	ගොඩ පුරක්	N	VU													
7	Acanthaceae	<i>Thunbergia grandiflora</i>		I	NE		1											
8	Amaranthaceae	<i>Achyranthes aspera</i>	කරල් හැබ	N	LC		1											
9	Amaranthaceae	<i>Cyathula prostrata</i>	බිම් කරල් හැබ	N	VU													
10	Anacardiaceae	<i>Mangifera indica</i>	අඹ	I	NE						1							
11	Annonaceae	<i>Artabotrys zeylanicus</i>	කළු බඹර වැල්	N	LC													1
12	Apocynaceae	<i>Alstonia macrophylla</i>	හවරි නූග	I	NE				1		1	1		1				1
13	Apocynaceae	<i>Alstonia scholaris</i>	රක් අත්තන	N	LC	1					1		1	1	1	1		
14	Apocynaceae	<i>Anodendron parviflorum</i>	දුල්, ගැරඩි දුල්	N	VU								1	1				1
15	Apocynaceae	<i>Chonemorpha fragrans</i>	බු වැල් අඟුණ, බු කිරි වැල්, එළ වැල් අඟුණ	N	VU													
16	Apocynaceae	<i>Ichnocarpus frutescens</i>	කිරි වැල්	N	LC													
17	Apocynaceae	<i>Tabernaemontana dichotoma</i>	දිවි කදුරු	E	LC									1				

	Family	Scientific Name	Common Name	DS	CS	D57	D58	D59	D60	D61	D62	D63	D64	D65	D66	D67	D68	D69
18	Apocynaceae	<i>Gymnema sylvestre</i>	මස් බැද්ද, බිම් නුග	N	VU													1
19	Araceae	<i>Alocasia macrorrhizos</i>	හබරල	I	NE							1	1					
20	Araceae	<i>Caladium bicolor</i>		I	NE								1					
21	Araceae	<i>Colocasia esculenta</i>	ගහල	N	LC	1			1				1	1	1			
22	Araceae	<i>Dieffenbachia seguine</i>		I	NE								1	1	1			
23	Araceae	<i>Lagenandra ovata</i>	කෙටෙල, වැනුල	N	LC					1								
24	Araceae	<i>Lasia spinosa</i>	කොහිල	N	LC						1		1					
25	Araceae	<i>Pothos scandens</i>	පෝටා වැල්	N	LC						1	1		1				
26	Araceae	<i>Syngonium angustatum</i>	වැල් කොහිල	I	NE			1									1	
27	Araliaceae	<i>Schefflera stellata</i>	ඉත්ත	N	LC													
28	Arecaceae	<i>Areca catechu</i>	පුවක්	I	NE	1												
29	Arecaceae	<i>Areca triandra</i>		I	NE													
30	Arecaceae	<i>Calamus thwaitesii</i>	මා වේ වැල්	N	VU													1
31	Arecaceae	<i>Caryota urens</i>	කිතුල්	N	LC	1					1	1		1		1	1	1
32	Arecaceae	<i>Elaeis guineensis</i>	කටු පොල්	I	NE													
33	Aristolochiaceae	<i>Aristolochia indica</i>	සප්පද	N	LC													
34	Aristolochiaceae	<i>Thottea siliquosa</i>	නාපසර බුලත්	N	LC	1											1	
35	Asphodelaceae	<i>Dianella ensifolia</i>	මොණර පෙනත්	N	LC													1
36	Asteraceae	<i>Ageratum conyzoides</i>	නුලන්තලා	I	NE		1						1				1	1
37	Asteraceae	<i>Chromolaena odorata</i>	පොඩි සිඤ්ඤොමර න්	I	NE				1		1		1				1	1
38	Asteraceae	<i>Crassocephalum crepidioides</i>		I	NE	1	1				1				1	1		

	Family	Scientific Name	Common Name	DS	CS	D57	D58	D59	D60	D61	D62	D63	D64	D65	D66	D67	D68	D69
103	Lythraceae	<i>Lagerstroemia speciosa</i>	මුරුත	N	LC					1								
104	Magnoliaceae	<i>Magnolia champaca</i>	සපු	I	NE						1							
105	Malvaceae	<i>Hibiscus hispidissimus</i>		N	LC													
106	Malvaceae	<i>Hibiscus surattensis</i>	හීන් නාපිරින්න	N	LC	1					1						1	
107	Malvaceae	<i>Hibiscus tilliaceous</i>	බෙලි පව්ට, වල් බෙලි	N	LC													
108	Malvaceae	<i>Sida acuta</i>	ගස් බැබිල	N	LC				1									
109	Malvaceae	<i>Sida rhombifolia</i> subsp. <i>rhombifolia</i>	කොටිකන් බැබිල	N	LC		1											
110	Malvaceae	<i>Urena lobata</i>	පව්ට ඇපල	N	LC		1						1	1		1		
111	Malvaceae	<i>Urena lobata</i> subsp. <i>sinuata</i>	හීන් ඇපල	N	LC		1							1				
112	Malvaceae	<i>Bombax ceiba</i>	කටු ඉඹුල්	N	LC													
113	Malvaceae	<i>Ceiba pentandra</i>	කොට්ට පුලුන්	I	NE											1	1	
114	Malvaceae	<i>Durio zibethinus</i>	දුරියන්	I	NE										1			
115	Malvaceae	<i>Triumfetta pentandra</i>	ඇපල, කපු කිනිස්ස	N	LC													
116	Malvaceae	<i>Triumfetta pilosa</i>		N	LC													
117	Melastomataceae	<i>Heterotis rotundifolia</i>		I	NE											1		
118	Melastomataceae	<i>Melastoma malabathricum</i>	මහ බෝවිටියා	N	LC						1						1	1
119	Melastomataceae	<i>Memecylon umbellatum</i>	කොර කහ	N	LC													1
120	Melastomataceae	<i>Miconia crenata</i>	කටකළ බෝවිටියා	I	NE	1	1	1	1		1	1	1		1	1	1	1
121	Melastomataceae	<i>Osbeckia octandra</i>	හීන් බෝවිටියා	E	LC						1							

	Family	Scientific Name	Common Name	DS	CS	D57	D58	D59	D60	D61	D62	D63	D64	D65	D66	D67	D68	D69
122	Meliaceae	<i>Melia azedarach</i>	ලුණුමිදෙල්ල	I	DD													
123	Meliaceae	<i>Swietenia macrophylla</i>	මැහෝගනී	I	NE													
124	Menispermaceae	<i>Anamirta cocculus</i>	නින්ත වැල්	N	LC									1				
125	Moraceae	<i>Artocarpus altilis</i>	රට දෙල්, දෙල්	I	NE													
126	Moraceae	<i>Artocarpus heterophyllus</i>	කොස්	I	NE													
127	Moraceae	<i>Artocarpus hirsutus</i>	බු දෙල්	I	NE													
128	Moraceae	<i>Artocarpus nobilis</i>	වල් දෙල්	E	LC						1					1		
129	Moraceae	<i>Ficus diversiformis</i>		E	LC													1
130	Moraceae	<i>Ficus drupacea</i> var. <i>pubescens</i>	බු නුග	N	LC													
131	Moraceae	<i>Ficus exasperata</i>	බු නෙදිය	N	LC							1	1	1				
132	Moraceae	<i>Ficus hispida</i>	කොට දිඹුල	N	LC						1		1	1				1
133	Moraceae	<i>Ficus tinctoria</i>	වල් ඇහැටු	N	LC	1								1				1
134	Moraceae	<i>Ficus tsjakela</i>	කිරිපෙල්ල	N	LC											1		
135	Myristicaceae	<i>Horsfieldia iryaghedhi</i>	රක්	E	VU									1				
136	Myrtaceae	<i>Syzygium aromaticum</i>	කරාබු	I	NE													
137	Myrtaceae	<i>Syzygium caryophyllatum</i>	දං, හීන් දං	N	LC			1			1	1		1				1
138	Myrtaceae	<i>Syzygium nervosum</i>	බට දඹ	N	LC				1		1		1	1				1
139	Ochnaceae	<i>Campylospermum serratum</i>	බෝ කර	N	LC							1						1
140	Onagraceae	<i>Ludwigia hyssopifolia</i>		I	NE				1									
141	Orchidaceae	<i>Acampe ochracea</i>	කුඩා නාඹ	N	NT							1						
142	Orchidaceae	<i>Dendrobium macrostachyum</i>	පොසොන් මල්	N	LC						1							
143	Orchidaceae	<i>Luisia zeylanica</i>		N	LC													
144	Oxalidaceae	<i>Oxalis barrelieri</i>		I	NE		1				1	1		1		1		

	Family	Scientific Name	Common Name	DS	CS	D57	D58	D59	D60	D61	D62	D63	D64	D65	D66	D67	D68	D69
145	Pandanaceae	<i>Freycinetia walkeri</i>	වියකෙයියා	E	NT									1				
146	Pandanaceae	<i>Pandanus ceylanicus</i>	මී කෙයියා	E	VU													
147	Pandanaceae	<i>Pandanus kaida</i>	වැටකෙයියා	N	LC					1								
148	Phyllanthaceae	<i>Aporosa cardiosperma</i>	කබලේල	N	LC													
149	Phyllanthaceae	<i>Breynia androgyna</i>	ජපන් බටු	N	LC									1		1		1
150	Phyllanthaceae	<i>Breynia retusa</i>	වල් මුරංගා, වා	N	LC													
151	Phyllanthaceae	<i>Breynia vitis-idaea</i>	ගස් කයිල	N	LC						1							
152	Phyllanthaceae	<i>Bridelia moonii</i>	පන් කැල	E	LC				1					1				
153	Phyllanthaceae	<i>Glochidion nemorale</i>		E	LC						1							
154	Phyllanthaceae	<i>Phyllanthus amarus</i>	පිටවක්කා	N	NE				1									
155	Phyllanthaceae	<i>Phyllanthus reticulatus</i>	වල් කයිල, ගස් දුම්මලේල, කයිල	N	LC													
156	Phyllanthaceae	<i>Phyllanthus urinaria</i>	රන් පිටවක්කා	N	LC													
157	Piperaceae	<i>Peperomia pellucida</i>	දිය තීප්පිලි	I	NE		1											
158	Piperaceae	<i>Piper nigrum</i>	ගම්මිරිස්	I	NE												1	
159	Plantaginaceae	<i>Adenosma camphorata</i>	කහ ගෝන කොළ	E	EN													
160	Plantaginaceae	<i>Scoparia dulcis</i>	වල් කොත්තමල්ලි	I	NE										1			
161	Poaceae	<i>Axonopus compressus</i>	පොතු තණ	I	NE													
162	Poaceae	<i>Bambusa vulgaris</i>	කහ දණ	I	NE							1						
163	Poaceae	<i>Cenchrus polystachios</i>		I	NE							1						
164	Poaceae	<i>Ochlandra stridula</i>	බට	E	LC					1								
165	Poaceae	<i>Urochloa maxima</i>	ගිණි තණ	I	NE						1	1			1			

	Family	Scientific Name	Common Name	DS	CS	D57	D58	D59	D60	D61	D62	D63	D64	D65	D66	D67	D68	D69
166	Rhamnaceae	<i>Ziziphus oenopolia</i>	හීන් එරමිණියා	N	LC						1							
167	Rhamnaceae	<i>Ziziphus rugosa</i>	මහ එරමිණියා	N	NT				1									1
168	Rubiaceae	<i>Coffea arabica</i>	කෝපි	I	NE												1	
169	Rubiaceae	<i>Exallage auricularia</i> subsp. <i>auricularia</i>	ගැට කොළ	N	LC													
170	Rubiaceae	<i>Gaertnera vaginans</i>	ජේර නඹල	E	LC						1							
171	Rubiaceae	<i>Gynochthodes</i> <i>umbellata</i>	කිරි වැල්	N	LC												1	
172	Rubiaceae	<i>Hedyotis neesiana</i>	උල් වැරණිය, පිට සුදු පළා	N	VU													
173	Rubiaceae	<i>Mussaenda frondosa</i>	මුස්සන්ද	N	LC	1					1						1	1
174	Rubiaceae	<i>Ophiorrhiza mungos</i>	දන් කැටිය	N	LC	1							1	1	1			
175	Rubiaceae	<i>Spermacoce exilis</i>		I	NE													
176	Rubiaceae	<i>Spermacoce latifolia</i>		I	NE				1						1			
177	Rubiaceae	<i>Spermacoce ocymifolia</i>		I	NE		1	1	1		1				1			
178	Rubiaceae	<i>Uncaria elliptica</i>		N	LC									1				
179	Rutaceae	<i>Melicope lunu-ankenda</i>	ලුණු අත්කෝන්ද	N	LC													1
180	Sapindaceae	<i>Allophylus cobbe</i>	කොබ්බෑ	N	LC													
181	Sapindaceae	<i>Filicium decipiens</i>	පිහිඹිය	N	LC													1
182	Sapindaceae	<i>Nephelium lappaceum</i>	රඹුටන්	I	NE													
183	Sapindaceae	<i>Pometia pinnata</i>	බුලු මොර, නා ඉඹුල්, ගල් මොර	N	LC					1								1
184	Smilacaceae	<i>Smilax perfoliata</i>	මහ කබරස	N	LC									1				
185	Smilacaceae	<i>Smilax zeylanica</i>	හීන් කබරස	N	NT						1							

	Family	Scientific Name	Common Name	DS	CS	D57	D58	D59	D60	D61	D62	D63	D64	D65	D66	D67	D68	D69
186	Symplocaceae	<i>Symplocos acuminata</i>	බෝඹු	N	LC	1			1		1	1	1	1	1		1	
187	Urticaceae	<i>Pilea microphylla</i>	පරිජප්පු ගස්	I	NE									1				
188	Verbenaceae	<i>Lantana camara</i>	ගඳපාන	I	NE				1		1	1		1		1	1	1
189	Verbenaceae	<i>Stachytarpheta cayennensis</i>		I	NE													
190	Verbenaceae	<i>Stachytarpheta jamaicensis</i>	බලුනකුට	I	NE				1		1	1		1				
191	Vitaceae	<i>Cyphostemma trilobata</i>		N	LC													
192	Vitaceae	<i>Tetrastigma nilagiricum</i>		N	LC													
193	Vitaceae	<i>Leea indica</i>	බුරුල්ල	N	LC								1	1				
194	Zingiberaceae	<i>Curcuma zedoaria</i>	හරන් කහ	I	NE				1									
195	Zingiberaceae	<i>Hedychium coronarium</i>	එළ මල්	I	NE							1	1	1				

	Family	Scientific Name	Common Name	DS	CS	D90	D91	D92	D93	D94	D95	D96	D107	D108	D109	D110	D111
33	Aristolochiaceae	<i>Aristolochia indica</i>	සප්පද	N	LC	1											
34	Aristolochiaceae	<i>Thottea siliquosa</i>	තාපසර බුලත්	N	LC												
35	Asphodelaceae	<i>Dianella ensifolia</i>	මොණර පෙනත්	N	LC												
36	Asteraceae	<i>Ageratum conyzoides</i>	හුලන්තලා	I	NE	1	1	1						1		1	1
37	Asteraceae	<i>Chromolaena odorata</i>	පොඩි සිඤ්ඤාමරන්	I	NE	1			1					1		1	
38	Asteraceae	<i>Crassocephalum crepidioides</i>		I	NE		1	1	1					1	1	1	
39	Asteraceae	<i>Cyanthillium cinereum</i>	මොණරකුඩුමිටි ය	N	LC	1	1							1			
40	Asteraceae	<i>Elephantopus scaber</i>	අත් අඩි, ගොඩිච්චි	N	LC												
41	Asteraceae	<i>Eleutheranthera ruderalis</i>		I	NE												
42	Asteraceae	<i>Emilia exserta</i>	හුලන්තලා, කඩුපහර	N	LC		1										
43	Asteraceae	<i>Emilia sonchifolia</i>	කඩුපහර	N	LC												
44	Asteraceae	<i>Erigeron bonariensis</i>	සුදන	I	NE												
45	Asteraceae	<i>Mikania cordata</i>	චතු පාලි	I	NE	1	1	1	1							1	1
46	Asteraceae	<i>Sphagneticola trilobata</i>	උදය කුමාර්	I	NE			1			1				1		
47	Asteraceae	<i>Struchium sparganophorum</i>		I	NE			1									
48	Balsaminaceae	<i>Impatiens flaccida</i>	කුඩලේ	N	NT	1		1					1				
49	Begoniaceae	<i>Begonia cordifolia</i>	ගල් ඇඹල	N	VU												
50	Begoniaceae	<i>Begonia hirtella</i>	හක් ඇඹල	I	NE						1						

	Family	Scientific Name	Common Name	DS	CS	D90	D91	D92	D93	D94	D95	D96	D107	D108	D109	D110	D111
106	Malvaceae	<i>Hibiscus surattensis</i>	හීන් නාපිරින්න	N	LC												
107	Malvaceae	<i>Hibiscus tilliaceous</i>	බෙලි පව්ට, වල් බෙලි	N	LC												1
108	Malvaceae	<i>Sida acuta</i>	ගස් බැබිල	N	LC												
109	Malvaceae	<i>Sida rhombifolia</i> subsp. <i>rhombifolia</i>	කොටිකන් බැබිල	N	LC	1	1		1								1
110	Malvaceae	<i>Urena lobata</i>	පව්ට ඇපල	N	LC	1								1			1
111	Malvaceae	<i>Urena lobata</i> subsp. <i>sinuata</i>	හීන් ඇපල	N	LC												
112	Malvaceae	<i>Bombax ceiba</i>	කටු ඉඹුල්	N	LC							1					
113	Malvaceae	<i>Ceiba pentandra</i>	කොට්ට පුලුන්	I	NE	1											
114	Malvaceae	<i>Durio zibethinus</i>	දූරියන්	I	NE												
115	Malvaceae	<i>Triumfetta pentandra</i>	ඇපල, කපු කිනිස්ස	N	LC												1
116	Malvaceae	<i>Triumfetta pilosa</i>		N	LC					1							
117	Melastomataceae	<i>Heterotis rotundifolia</i>		I	NE												
118	Melastomataceae	<i>Melastoma malabathricum</i>	මහ බෝවිටියා	N	LC												
119	Melastomataceae	<i>Memecylon umbellatum</i>	කොර කහ	N	LC												
120	Melastomataceae	<i>Miconia crenata</i>	කටකළු බෝවිටියා	I	NE	1	1	1			1	1	1	1	1	1	
121	Melastomataceae	<i>Osbeckia octandra</i>	හීන් බෝවිටියා	E	LC			1									
122	Meliaceae	<i>Melia azedarach</i>	ලුණුමිදෙල්ල	I	DD					1							
123	Meliaceae	<i>Swietenia macrophylla</i>	මැහෝගනී	I	NE					1	1		1				

	Family	Scientific Name	Common Name	DS	CS	D90	D91	D92	D93	D94	D95	D96	D107	D108	D109	D110	D111
160	Plantaginaceae	<i>Scoparia dulcis</i>	වල් කොත්තමල්ලි	I	NE		1	1									
161	Poaceae	<i>Axonopus compressus</i>	පොතු තණ	I	NE	1	1					1			1	1	
162	Poaceae	<i>Bambusa vulgaris</i>	කහ උණ	I	NE		1										
163	Poaceae	<i>Cenchrus polystachios</i>		I	NE												1
164	Poaceae	<i>Ochlandra stridula</i>	බට	E	LC						1						1
165	Poaceae	<i>Urochloa maxima</i>	ගිණි තණ	I	NE					1							
166	Rhamnaceae	<i>Ziziphus oenoplia</i>	හීන් එරමිණියා	N	LC	1								1			1
167	Rhamnaceae	<i>Ziziphus rugosa</i>	මහ එරමිණියා	N	NT					1							
168	Rubiaceae	<i>Coffea arabica</i>	කෝපි	I	NE						1		1		1		
169	Rubiaceae	<i>Exallage auricularia</i> subsp. <i>auricularia</i>	ගැට කොළ	N	LC	1			1					1	1	1	
170	Rubiaceae	<i>Gaertnera vaginans</i>	පේර තඹල	E	LC												
171	Rubiaceae	<i>Gynochthodes umbellata</i>	කිරි වැල්	N	LC												
172	Rubiaceae	<i>Hedyotis neesiana</i>	උල් වැරණිය, පිට සුදු පලා	N	VU			1									
173	Rubiaceae	<i>Mussaenda frondosa</i>	මුස්සන්ද	N	LC	1											1
174	Rubiaceae	<i>Ophiorrhiza mungos</i>	දන් කැටිය	N	LC	1					1	1			1		
175	Rubiaceae	<i>Spermacoce exilis</i>		I	NE		1										
176	Rubiaceae	<i>Spermacoce latifolia</i>		I	NE		1	1	1					1		1	

Annex 2b.1. The list of animal species recorded in Udapola and Yatapola Divisions during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **N** - Native, **I** – Introduced. **CS** - Conservation Status (National Conservation Status or * Global Conservation Status); **CR** - Critically Endangered; **DD** - Data Deficient; **EN** – Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** – Vulnerable. **D##**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	D57	D58	D59	D60	D61	D62	D63	D64	D65	D66	D67	D68	D69
Dragonflies																		
1	Calopterygidae	<i>Neurobasis chinensis</i>	Oriental green-wing	N	VU					1								
2	Calopterygidae	<i>Vestails nigrescens</i>	Black-tipped flashwing	N	LC*	1	1		1			1	1	1				1

	Family	Scientific Name	Common Name	DS	CS	D57	D58	D59	D60	D61	D62	D63	D64	D65	D66	D67	D68	D69
3	Chlorocyphidae	<i>Libellago greeni</i>	Green's Gem	E	LC*					1								
4	Euphaeidae	<i>Euphaea splendens</i>	Shining Gossamerwing	E	LC*								1	1				
5	Coenagrionidae	<i>Archibasis lieftincki</i>	Lieftinck's Sprite	E	EN*					1								
6	Platycnemididae	<i>Copera marginipes</i>	Yellow Featherleg	N	LC	1												
7	Platycnemididae	<i>Elattoneura caesia</i>	Jungle Threadtail	E	NT*						1							
8	Platycnemididae	<i>Elattoneura centralis</i>	Dark-glittering Threadtail	E	LC*								1	1	1	1		
9	Platycnemididae	<i>Prodasineura sita</i>	Stripe-headed Threadtail	E	LC*					1								
10	Platystictidae	<i>Ceylonosticta anamia</i>	Ana Mia's Shadowdamsel	E	VU*						1				1			1
11	Platystictidae	<i>Ceylonosticta brincki</i>	Brinck's Shadowdamsel	E	LC*					1		1				1		
12	Platystictidae	<i>Ceylonosticta lankanensis</i>	Drooping Shadowdamsel	E	LC*											1		
13	Platystictidae	<i>Ceylonosticta bine</i>	Bine's Shadowdamsel	E	VU*	1					1							1
14	Platystictidae	<i>Platysticta serendibica</i>	Serendib Forestdamsel	E	NT*	1						1						
15	Gomphidae	<i>Cyclogomphus gynostylus</i>	Transvestite Clubtail	E	VU*					1								
16	Gomphidae	<i>Paragomphus henryi</i>	Brook Hooktail	E	NT*					1								
17	Macromiidae	<i>Macromia zeylanica</i>	Sri Lanka Cruiser	E	VU*					1								
18	Libellulidae	<i>Orthetrum chrysis</i>	Spine-tufted Skimmer	N	VU				1						1			
19	Libellulidae	<i>Orthetrum glaucum</i>	Asian Skimmer	N	NT				1		1		1	1	1			
20	Libellulidae	<i>Orthetrum luzonicum</i>	Marsh Skimmer	N	NT	1			1									
21	Libellulidae	<i>Orthetrum pruinatum</i>	Pink Skimmer	N	NT													
22	Libellulidae	<i>Orthetrum sabina</i>	Green Skimmer	N	LC								1	1	1		1	

	Family	Scientific Name	Common Name	DS	CS	D57	D58	D59	D60	D61	D62	D63	D64	D65	D66	D67	D68	D69
23	Libellulidae	<i>Acisoma panorpoides</i>	Asian Pintail	N	LC													
24	Libellulidae	<i>Neurothemis tullia</i>	Pied Parasol	N	LC	1	1	1						1				
25	Libellulidae	<i>Trithemis festiva</i>	Indigo Dropwing	N	VU				1		1	1	1	1	1			
26	Libellulidae	<i>Onychothemis testacea</i>	Aggressive Riverhawk	N	EN					1								
27	Libellulidae	<i>Zygonyx iris</i>	Sri Lanka Cascader	N	LC*									1				
Butterflies																		
1	Papilionidae	<i>Troides darsius</i>	Sri Lankan Birdwing	E	LC													
2	Papilionidae	<i>Pachliopta hector</i>	Crimson Rose	N	LC							1						
3	Papilionidae	<i>Pachliopta aristolochiae</i>	Common Rose	N	LC							1						
4	Papilionidae	<i>Papilio helenus</i>	Red Helen	N	VU													1
5	Papilionidae	<i>Papilio polytes</i>	Common Mormon	N	LC								1				1	1
6	Papilionidae	<i>Papilio polymnestor</i>	Blue Mormon	N	LC												1	1
7	Papilionidae	<i>Graphium tereдон</i>	Narrow-banded Bluebottle	N	LC						1							
8	Papilionidae	<i>Graphium agamemnon</i>	Tailed Jay	N	LC												1	
9	Pieridae	<i>Leptosia nina</i>	Psyche	N	LC		1		1		1		1	1	1			
10	Pieridae	<i>Appias galene</i>	Sri Lankan Lesser Albatross	E	LC					1	1						1	
11	Pieridae	<i>Catopsilia pomona</i>	Lemon EM	N	LC							1		1	1			
12	Pieridae	<i>Catopsilia pyranthe</i>	Mottled EM	N	LC							1						
13	Pieridae	<i>Eurema hecabe</i>	Common Grass Yellow	N	LC						1							
14	Nymphalidae	<i>Parantica aglea</i>	Glassy Tiger	N	LC						1						1	
15	Nymphalidae	<i>Danaus genutia</i>	Common Tiger	N	LC							1						
16	Nymphalidae	<i>Euploea core</i>	Common Crow	N	LC													
17	Nymphalidae	<i>Phalanta phalantha</i>	Common Leopard	N	LC							1						

	Family	Scientific Name	Common Name	DS	CS	D57	D58	D59	D60	D61	D62	D63	D64	D65	D66	D67	D68	D69
9	Elapidae	<i>Naja naja</i>	Indian Cobra	N	LC*		1											
10	Typhlopidae	<i>Typhlopidae sp. 2</i>					1											
11	Viperidae	<i>Hypnale hypnale</i>	Merrem's Hump-nosed Pit Viper	N	LC*		1											
Birds																		
1	Phasianidae	<i>Pavo cristatus</i>	Indian Peafowl	N	LC													
2	Accipitridae	<i>Ictinaetus malayensis</i>	Black Eagle	N	NT													
3	Accipitridae	<i>Haliastur indus</i>	Brahminy Kite	N	LC									1				
4	Accipitridae	<i>Spizaetus cirrhatus</i>	Changeable Hawk-eagle	N	LC													
5	Accipitridae	<i>Spilornis cheela</i>	Crested Serpent-eagle	N	LC							1	1					
6	Accipitridae	<i>Pernis ptilorhyncus</i>	Oriental Honey-buzzard	N	NT													
7	Accipitridae	<i>Accipiter badius</i>	Shikra	N	LC													
8	Columbidae	<i>Chalcophaps indica</i>	Emerald Dove	N	LC													1
9	Columbidae	<i>Ducula aenea</i>	Green Imperial-Pigeon	N	LC		1											
10	Columbidae	<i>Stigmatopelia chinensis</i>	Spotted Dove	N	LC		1	1										
11	Psittacidae	<i>Psittacula cyanocephala</i>	Plum-headed Parakeet	N	NT													
12	Psittacidae	<i>Psittacula calthropae</i>	Sri Lanka Emerald-collared Parakeet	E	NT	1	1	1										
13	Psittacidae	<i>Loriculus beryllinus</i>	Sri Lanka Hanging Parrot	E	LC	1	1		1			1		1	1			1
14	Cuculidae	<i>Centropus sinensis</i>	Greater Coucal	N	LC													
15	Cuculidae	<i>Cuculus varius</i>	Common Hawk-cuckoo	N	EN													
16	Strigidae	<i>Ketupa zeylonensis</i>	Brown Fish-owl	N	LC											1		
17	Apodidae	<i>Cypsiurus balasiensis</i>	Asian Palm-swift	N	LC										1			

	Family	Scientific Name	Common Name	DS	CS	D57	D58	D59	D60	D61	D62	D63	D64	D65	D66	D67	D68	D69
18	Apodidae	<i>Apus affinis</i>	Little Swift	N	LC							1						
19	Hemiprocnidae	<i>Hemiprocne coronata</i>	Crested Treeswift	N	LC													
20	Alcedinidae	<i>Halcyon smyrnensis</i>	White-throated Kingfisher	N	LC			1	1									
21	Meropidae	<i>Merops leschenaulti</i>	Chestnut-headed Bee-eater	N	LC													
22	Ramphastidae	<i>Megalaima zeylanica</i>	Brown-headed Barbet	N	LC													
23	Ramphastidae	<i>Megalaima rubricapillus</i>	Sri Lanka Barbet	E	LC		1								1			
24	Ramphastidae	<i>Megalaima flavifrons</i>	Sri Lanka Yellow-fronted Barbet	E	LC	1	1	1	1	1	1	1	1		1		1	
25	Picidae	<i>Dinopium psarodes</i>	Lesser Sri Lanka Flameback	E	LC		1	1			1							
26	Picidae	<i>Dendrocopos nanus</i>	Brown-capped Woodpecker	N	LC													
27	Picidae	<i>Picus chlorolophus</i>	Lesser Yellownape	N	NT													
28	Aegithinidae	<i>Aegithina tiphia</i>	Common Iora	N	LC						1							
29	Campephagidae	<i>Pericrocotus flammeus</i>	Scarlet Minivet	N	LC	1												
30	Campephagidae	<i>Pericrocotus cinnamomeus</i>	Small Minivet	N	LC													
31	Campephagidae	<i>Coracina melanoptera</i>	Black-headed Cuckoo-shrike	N	LC													
32	Campephagidae	<i>Tephrodornis pondicerianus</i>	Sri Lanka Wood-shrike	E	LC													
33	Laniidae	<i>Lanius cristatus</i>	Brown Shrike	M	LC*													
34	Oriolidae	<i>Oriolus xanthonus</i>	Black-hooded Oriole	N	LC						1						1	

	Family	Scientific Name	Common Name	DS	CS	D57	D58	D59	D60	D61	D62	D63	D64	D65	D66	D67	D68	D69
56	Muscicapidae	<i>Cyornis tickelliae</i>	Tickell's Blue Flycatcher	N	LC													
57	Muscicapidae	<i>Muscicapa dauurica</i>	Asian Brown Flycatcher	M	LC*													
58	Chloropseidae	<i>Chloropsis aurifrons</i>	Golden Fronted Leafbird	N	LC													
59	Chloropseidae	<i>Chloropsis jerdoni</i>	Jerdon's Leafbird	N	LC				1									
60	Dicaeidae	<i>Dicaeum erythrorhynchos</i>	Pale-billed Flowerpecker	N	LC	1	1				1		1	1			1	1
61	Nectariniidae	<i>Nectarinia zeylonica</i>	Purple-rumped Sunbird	N	LC					1	1			1		1		
62	Nectariniidae	<i>Nectarinia lotenia</i>	Long-billed Sunbird	N	LC													
63	Estrildidae	<i>Lonchura punctulata</i>	Scaly-breasted Munia	N	LC													
Mammals																		
1	Manidae	<i>Manis crassicaudata</i>	Pangolin	N	NT									1				
2	Cercopithecidae	<i>Macaca sinica</i>	Sri Lanka toque monkey	E	LC													
3	Cercopithecidae	<i>Semnopithecus vetulus</i>	Sri Lanka Purple-faced langur	E	EN													
4	Viverridae	<i>Paradoxurus hermaphoditus</i>	Palm cat	N	LC									1				
5	Viverridae	<i>Viverricula indica</i>	Ring-tailed civet	N	LC									1				
6	Cervidae	<i>Muntiacus muntjak</i>	Barking deer	N	NT						1							
7	Suidae	<i>Sus scrofa</i>	Wild boar	N	LC						1		1		1	1	1	1
8	Hystricidae	<i>Hystrix indica</i>	Porcupine	N	LC	1			1				1	1	1	1	1	
9	Sciuridae	<i>Funambulus palmarum</i>	Palm squirrel	N	LC													1
10	Mustelidae	<i>Lutra lutra</i>	Otter	N	VU					1				1				
11	Felidae	<i>Prionailurus viverrinus</i>	Fishing cat	N	EN									1			1	

	Family	Scientific Name	Common Name	DS	CS	D90	D91	D92	D93	D94	D95	D96	D107	D108	D109	D110	D111
16	Nymphalidae	<i>Euploea core</i>	Common Crow	N	LC	1		1	1							1	
17	Nymphalidae	<i>Phalanta phalantha</i>	Common Leopard	N	LC												
18	Nymphalidae	<i>Cirrochroa thais</i>	Tamil Yeoman	N	LC	1											
19	Nymphalidae	<i>Junonia atlites</i>	Grey Pansy	N	LC			1		1							
20	Nymphalidae	<i>Junonia iphita</i>	Chocolate Soldier	N	LC	1			1	1			1				
21	Nymphalidae	<i>Pantoporia hordonia</i>	Common Lascar	N	NT												
22	Nymphalidae	<i>Neptis hylas</i>	Common Sailor	N	LC	1	1	1		1		1	1	2			
23	Nymphalidae	<i>Neptis jumbah</i>	Chestnut Streaked Sailor	N	LC	1		1									
24	Nymphalidae	<i>Parthenos sylvia</i>	Clipper	N	LC												
25	Nymphalidae	<i>Melanitis leda</i>	Common Evening Brown	N	LC						1						
26	Nymphalidae	<i>Melanitis phedima</i>	Dark Evening Brown	N	NT												
27	Nymphalidae	<i>Orsotriaena medus</i>	Medus Brown	N	LC												
28	Nymphalidae	<i>Mycalesis mineus</i>	Dark-Brand Bushbrown	N	LC												
29	Nymphalidae	<i>Mycalesis perseus</i>	Common Bushbrown	N	LC							1					
30	Nymphalidae	<i>Mycalesis patnia</i>	Sri Lanka Gladeye Bushbrown	E	LC	1											
31	Nymphalidae	<i>Ypthima ceylonica</i>	White Four-ring	N	LC			1	1	1		1	1	5		1	
32	Nymphalidae	<i>Elymnias hypermnestra</i>	Common Palmfly	N	LC	1											
33	Lycaenidae	<i>Spalgis epeus</i>	Apefly	N	LC								1				
34	Lycaenidae	<i>Nacaduba hermus</i>	Pale Four Lineblue	N	NT												
35	Lycaenidae	<i>Everes lacturnus</i>	Indian Cupid	N	LC					1			1	3		1	
36	Lycaenidae	<i>Jamides bochus</i>	Dark Cerulean	N	LC	1	1	1	1	1	1	1	1		1	1	
37	Lycaenidae	<i>Jamides celeno</i>	Common Cerulean	N	LC	1	1	1	1	1	1	1	1	1	2	1	
38	Lycaenidae	<i>Castalius rosimon</i>	Common Pierrot	N	LC					1							

	Family	Scientific Name	Common Name	DS	CS	D90	D91	D92	D93	D94	D95	D96	D107	D108	D109	D110	D111
13	Channidae	<i>Channa orientalis</i>	Smooth-Breasted Snakehead	E	VU			1									1
14	Belonidae	<i>Xenentodon cancila</i>	Freshwater Gar Fish	N	VU												
15	Belontiidae	<i>Belontia signata</i>	Sri Lanka Combtail	E	VU												
Amphibians																	
1	Bufonidae	<i>Duttaphrynus melanostictus</i>	Common toad	N	LC							1					
2	Ranidae	<i>Indosylvirana temporalis</i>	Bronzed frog	E	NT*						1	1					
3	Dicroglossidae	<i>Euphlyctis cyanophlyctis</i>	Indian skipper frog	N	LC												
4	Dicroglossidae	<i>Minervarya agricola</i>	Common paddy field frog	N	LC	1											1
5	Dicroglossidae	<i>Minervarya kirtisinghei</i>	Kirtisinghe's frog	E	NT*												
6	Dicroglossidae	<i>Hoplobatrachus crassus</i>	Jurdon's bullfrog	N	LC												
7	Dicroglossidae	<i>Nannophrys ceylonensis</i>	Sri Lanka rock frog	E	VU*						1						
8	Nictibatrachidae	<i>Lankanectes corrugatus</i>	Corrugated water frog	E	NT*				1		1	1					1
9	Rhacophoridae	<i>Pseudophilautus popularis</i>	Common shrub frog	E	VU*							1					
Reptiles																	
1	Agamidae	<i>Calotes calotes</i>	Green forest Lizard	N	LC	1				1		1			1		1
2	Agamidae	<i>Calotes versicolor</i>	Garden Lizard	N	LC									1			
3	Agamidae	<i>Otocryptis wiegmanni</i>	Sri Lankan Kangaroo Lizard	E	LC*								1				
4	Gekkonidae	<i>Cnemaspis molligodai</i>	Molligoda's Daygecko	E	EN*												
5	Scincidae	<i>Lankascincus fallax</i>	Common Supple Skink	E	LC*		1						1				

	Family	Scientific Name	Common Name	DS	CS	D90	D91	D92	D93	D94	D95	D96	D107	D108	D109	D110	D111
15	Cuculidae	<i>Cuculus varius</i>	Common Hawk-cuckoo	N	EN					1							
16	Strigidae	<i>Ketupa zeylonensis</i>	Brown Fish-owl	N	LC												
17	Apodidae	<i>Cypsiurus balasiensis</i>	Asian Palm-swift	N	LC												
18	Apodidae	<i>Apus affinis</i>	Little Swift	N	LC												
19	Hemiprocnidae	<i>Hemiprocne coronata</i>	Crested Treeswift	N	LC		1					1	1	1			
20	Alcedinidae	<i>Halcyon smyrnensis</i>	White-throated Kingfisher	N	LC	1		1									1
21	Meropidae	<i>Merops leschenaulti</i>	Chestnut-headed Bee-eater	N	LC											1	1
22	Ramphastidae	<i>Megalaima zeylanica</i>	Brown-headed Barbet	N	LC									1	1		
23	Ramphastidae	<i>Megalaima rubricapillus</i>	Sri Lanka Barbet	E	LC	1	1			1				1			
24	Ramphastidae	<i>Megalaima flavifrons</i>	Sri Lanka Yellow-fronted Barbet	E	LC	1	1	1	1	1			1	1	1	1	
25	Picidae	<i>Dinopium psarodes</i>	Lesser Sri Lanka Flameback	E	LC						1				1		
26	Picidae	<i>Dendrocopos nanus</i>	Brown-capped Woodpecker	N	LC		1										
27	Picidae	<i>Picus chlorolophus</i>	Lesser Yellownape	N	NT		1	1									
28	Aegithinidae	<i>Aegithina tiphia</i>	Common lora	N	LC				1								
29	Campephagidae	<i>Pericrocotus flammeus</i>	Scarlet Minivet	N	LC							1			1		
30	Campephagidae	<i>Pericrocotus cinnamomeus</i>	Small Minivet	N	LC		1	1									
31	Campephagidae	<i>Coracina melanoptera</i>	Black-headed Cuckoo-shrike	N	LC				1								1
32	Campephagidae	<i>Tephrodornis pondicerianus</i>	Sri Lanka Wood-shrike	E	LC					1							

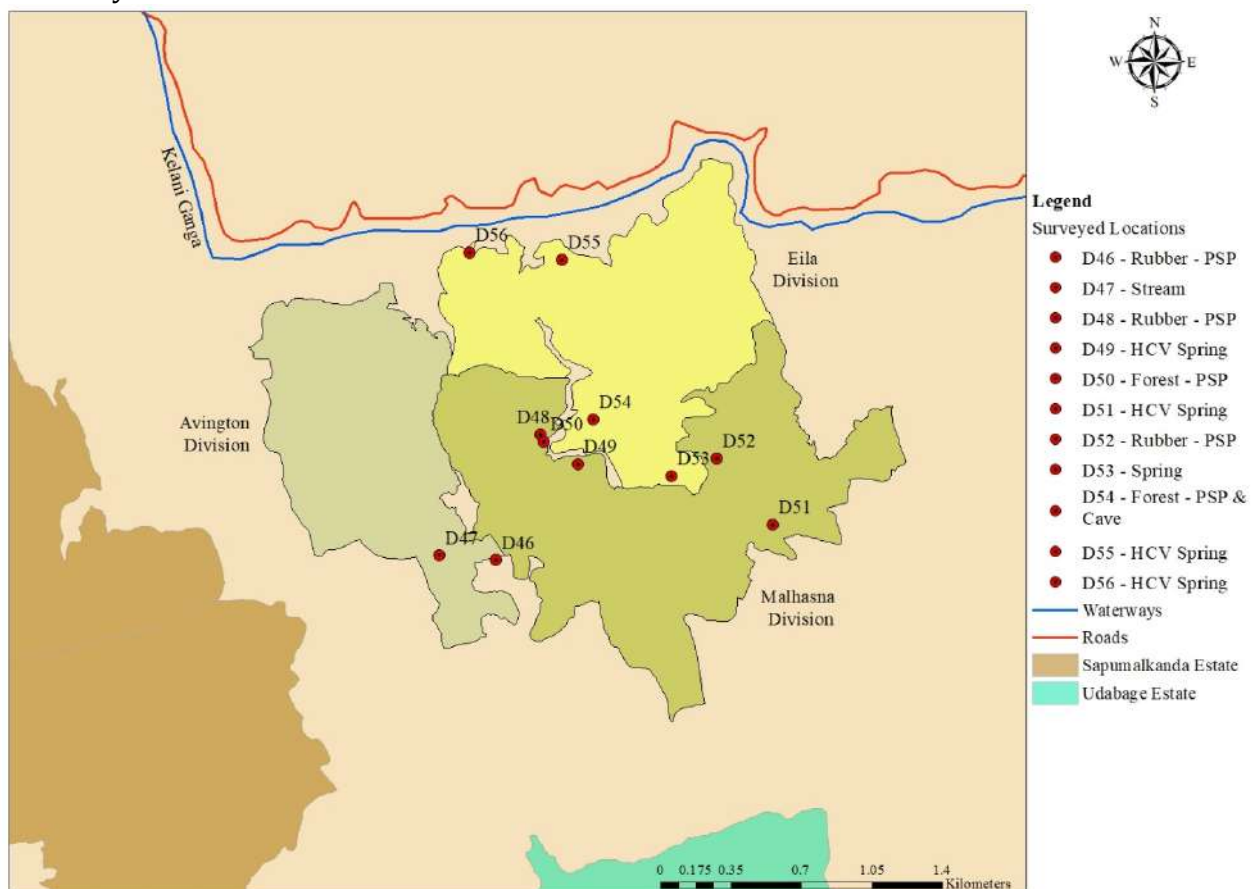
	Family	Scientific Name	Common Name	DS	CS	D90	D91	D92	D93	D94	D95	D96	D107	D108	D109	D110	D111
53	Sturnidae	<i>Gracula religiosa</i>	Hill Myna	N	LC											1	
54	Muscicapidae	<i>Saxicoloides fulicatus</i>	Indian Robin	N	LC										1		
55	Muscicapidae	<i>Copsychus saularis</i>	Oriental Magpie Robin	N	LC												
56	Muscicapidae	<i>Cyornis tickelliae</i>	Tickell's Blue Flycatcher	N	LC		1				1						
57	Muscicapidae	<i>Muscicapa dauurica</i>	Asian Brown Flycatcher	M	LC*	1					1						
58	Chloropseidae	<i>Chloropsis aurifrons</i>	Golden Fronted Leafbird	N	LC										1		
59	Chloropseidae	<i>Chloropsis jerdoni</i>	Jerdon's Leafbird	N	LC												
60	Dicaeidae	<i>Dicaeum erythrorhynchos</i>	Pale-billed Flowerpecker	N	LC				1			1		1	1	1	
61	Nectariniidae	<i>Nectarinia zeylonica</i>	Purple-rumped Sunbird	N	LC						1		1		1		
62	Nectariniidae	<i>Nectarinia lotenia</i>	Long-billed Sunbird	N	LC									1	1		
63	Estrildidae	<i>Lonchura punctulata</i>	Scaly-breasted Munia	N	LC			1									
Mammals																	
1	Manidae	<i>Manis crassicaudata</i>	Pangolin	N	NT												
2	Cercopithecidae	<i>Macaca sinica</i>	Sri Lanka toque monkey	E	LC						1	1	1				
3	Cercopithecidae	<i>Semnopithecus vetulus</i>	Sri Lanka Purple-faced langur	E	EN				1								
4	Viverridae	<i>Paradoxurus hermaphoditus</i>	Palm cat	N	LC												
5	Viverridae	<i>Viverricula indica</i>	Ring-tailed civet	N	LC												
6	Cervidae	<i>Muntiacus muntjak</i>	Barking deer	N	NT												
7	Suidae	<i>Sus scrofa</i>	Wild boar	N	LC				1				1	1		1	

Eila Estate

1. Introduction

Eila Estate is managed under the Udabage Group of Lalan Rubbers Pvt. Ltd. It is located in the Kegalle District and has a total extent of 468.5 ha. There are three divisions in the estate and the primary crops grown are rubber and oil palm while some extents of tea and timber blocks are also present. The extent of conservation areas in the estate is 8.17 ha. There is a conservation forest in the Eila Division and several HCV sites important for provision of freshwater are also present in the estate. In addition to these, a natural cave important for the conservation of cave biodiversity is found in the Eila Division.

Eila estate is located in the wet climatic zone of the country. Ecologically the area is near the conjunction of three floristic zones, i.e., Northern Wet Lowland Floristic Zone, Sinharaja and Rathnapura Floristic Zone and Foothills of Adam's Peak and Ambagamuwa Floristic Zone. The estate is located in the Kelani River basin and the river flows just north of the estate boundary.



Map of Eila Estate and the distribution of sampling sites (Table XX).

2. Methodological approach

2.1 Study locations: Altogether, 11 sampling sites were surveyed, 6 in Eila Division, 5 in Malhasna Division and 2 in Abington Division. These includes one Conservation Forest site, a forest cave, PSPs in Rubber, and a several springs and streams. A summary of locations sampled are given in Table 1 and the distribution of the sampling plots within the Eila estate is shown in Figure 1.

Table 1. The number of sites sampled within the Eila Estate

Division	Site	Site type	Site code	Latitude	Longitude	Ele. (m)
Avington	Rubber 2008	Rubber - PSP	D46	6.98013	80.33549	262
	Rubber 2008/2019	Stream	D47	6.98034	80.33296	216
Malhasna	Rubber 2021 (Prev. 1993)	Rubber - PSP	D48	6.98575	80.33749	177
	Rubber 2004 HCV	Spring	D49	6.98444	80.33917	200
	Rubber 2018 HCV spring	Spring	D51	6.98172	80.34787	225
	Rubber 2006	Rubber - PSP	D52	6.98468	80.34538	251
Eila	Conservation Forest	Forest - PSP	D50	6.98543	80.33765	137
	Ice Peella	Spring	D53	6.98390	80.34334	254
	Forest and cave above R2019	Forest - PSP and cave	D54	6.98644	80.33984	236
	Rubber 1989 HCV spring	Spring	D55	6.99358	80.33846	145
	Rubber 2015 HCV spring	Spring	D56	6.99389	80.33432	106

2.2 Study Period: This study was undertaken in July 2021 covering the wet season of the area.

2.3 Study techniques: Please refer Chapter 1

3. Key Findings of the Biodiversity Assessment

Based on the results of the assessments conducted in the Eila estate 119 species of plants and 119 species of animals were recorded. This included 31 species of endemic fauna, 21 species of endemic flora, 14 species of threatened fauna and 14 species of threatened flora. A summary of the species recorded under different taxonomic groups are presented in table 2. The detailed list of plants and animals observed during this study including their distribution and threat status is given in Annex 2a and 2b.

Table 2. Summary of the total fauna and flora recorded during the assessment.

Abbreviations used: **CR** - Critically Endangered; **EN** - Endangered; **VU** - Vulnerable, **NT** - Near Threatened, **DD** - Data Deficient.

Taxa	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Dragonflies	18	9	-	-	-	6	5	-
Butterflies	29	3	-	-	-	2	2	-
Freshwater Fish	4	2	-	-	-	-	3	-
Amphibians	6	5	-	-	-	2	2	-
Reptiles	8	4	-	-	-	1	-	-
Birds	42	6	-	-	-	-	2	-
Mammals	12	2	-	-	1	2	1	-
Sub-Total (Fauna)	119	31	0		1	13	15	0
Plants	119	21	38	1	2	11	4	2
Total (Species)	238	52	38	1	3	24	19	2

4. Important Findings of the Assessment

4.1. Critical Species

1. Cave fauna in the Eila Division

The caves in the forest patch above Rubber 2019 field in Eila Division is occupied by a number of cave dwelling fauna including insects, arachnids and other cave occupying species such as some amphibians and bats. As caves of a considerable size is a very uncommon ecosystem in the wet zone of Sri Lanka, the cave fauna composition in Eila is of high conservation importance to the local biodiversity in the landscape.



Cave dwelling assassin bug *Bagauda aelleni*. Eila Division. Image: AS

2. *Acrotrema dissectum*

An endemic herb, growing on wet surfaces of wet zone forests. Sometimes called බිම් බෙරු in Sinhalese. This was first published by G.H.K. Thwaites in 1856 based on a specimen collected from Hewesse, Pasdun Korale, Galle District in May 1855. After that there was a single record of a specimen collected from Gulanawatte forest near Pelawatta, Kaluthara district in 1969. Due to its rarity and lack of known occurrence records *A. dissectum* was listed as a Critically Endangered species in both 2012 & 2020 conservation assessments. This plant was observed on rock surfaces outside the caves in the forest patch above 2019 rubber field, Eila Division, Eila Estate (Site D54). This is the third known record of the species and most probably the first photographic record as well.



Acrotrema dissectum. Eila Division. Image: NC

2. Championia reticulata

An endemic low perennial herb growing up to 30cm. It grows in densely shaded habitats such as stream beds with loose soil, wet rock surfaces in undisturbed forests, and rarely on forest floor near streams. Flowering probably occurs throughout the year at irregular intervals. The species is usually recorded from wet lowland forests up to 1000m. In Eila estate, it was observed in the forest patch above Rubber 2019 field in Eila division.



Championia reticulata. Eila Division. Image: NC

4.2. Critical Habitats

1. Caves above R2019 field of Eila Division

The two caves and the surrounding forest patch provides a unique habitat combination in this site. The larger cave was occupied by a colony of Lesser False Vampire Bats and Rufous Horse-shoe Bats. The caves also support other cave dwelling invertebrate fauna and the rocky surface outside the cave provides a microhabitat for herbaceous plants specially adapted to such microhabitats including the Critically Endangered *Acrotrema dissectum* described above. The caves themselves and the surrounding forest patch provides a unique and a critical habitat for a distinctive composition of biodiversity.



Larger cave in the forest patch above 2019 Rubber field of Eila Division (Site D54)

5. Conclusions and Recommendations

Results of the present assessment indicates that the total species richness and the number of endemic and threatened species recorded remains equal or higher in most instances compared to previous survey done in 2016. It should be noted that some of the species recorded during the previous assessments have not been recorded during the present survey and number of new species including endemic and threatened species have been newly recorded during the present assessment. Therefore, based on this data it can be safely concluded that the species richness as well as number of critical species (endemic and threatened species) have not undergone a decline between the two assessments.

Based on the findings of this assessment and the field observations the following set of recommendations can be made.

1. The forest patch above the 2019 Rubber plantation in the Eila Division is recommended to be conserved as a Conservation Forest or a High Conservation Value Forest.
2. A natural cave is present in the forest patch where a unique set of cave fauna is found. The rock surface outside the cave provides the microhabitat for the very rare plant species *Acrotrema dissectum*. This plant is only known from a single location other than the site in Eila estate. A new Permanent Sampling Plot was recommended to be established at the cave entrance to monitor the changes in its biodiversity and habitat quality over time.

3. The assessment team was informed of another cave located on the other side of the 2019 Rubber field in the Eila Division. It was not accessible at the time due to the dense growth of shrubs at the forest edge. It is recommended to investigate this forest patch as well and take necessary conservation measures to protect the cave habitat and its unique biodiversity.
4. Please refer the list of recommendations in the main report for additional recommendations.

Annex 2a. The list of plant species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **I** - Introduced, **N** - Native. **CS** - Conservation Status (National Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** - Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** - Vulnerable. **D97-106**; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	D46	D47	D48	D49	D50	D51	D52	D53	D54	D55	D56
1	Acanthaceae	<i>Asystasia variabilis</i>	ගඳ පුරුක්	N	LC		1				1					
2	Acanthaceae	<i>Strobilanthes lupulina</i>	තෙළු	N	LC			1								
3	Acanthaceae	<i>Strobilanthes zeylanica</i>	තෙළු	E	VU										1	
4	Annonaceae	<i>Artabotrys hexapetalus</i>	යකඩ වැල්	N	VU									1		
5	Annonaceae	<i>Artabotrys zeylanicus</i>	කළු බඹර වැල්	N	LC	1		1		1						
6	Annonaceae	<i>Uvaria semecarpifolia</i>	කර බඹර	E	LC				1							
7	Apocynaceae	<i>Alstonia macrophylla</i>	හවරි නූග	I	NE	1		1	1	1	1	1	1	1	1	
8	Apocynaceae	<i>Alstonia scholaris</i>	රුක් අත්තන	N	LC	1		1		1		1	1	1		
9	Apocynaceae	<i>Anodendron parviflorum</i>	දුල්, ගැරඩි දුල්	N	VU							1				
10	Apocynaceae	<i>Tabernaemontana dichotoma</i>	දිවි කදුරු	E	LC			1		1				1		
11	Apocynaceae	<i>Gymnema sylvestre</i>	මස් බඳ්ද, බිම් නූග	N	VU				1							
12	Apocynaceae	<i>Hemidesmus indicus</i>	හීන් ඉරමුසු, ඉරමුසු	N	LC			1								
13	Apocynaceae	<i>Wattakaka volubilis</i>	අඟුණ	N	LC							1				
14	Araceae	<i>Alocasia cucullata</i>	ගහල	I	NE			1								
15	Araceae	<i>Caladium bicolor</i>		I	NE				1							
16	Araceae	<i>Colocasia esculenta</i>	ගහල	N	LC		1								1	
17	Araceae	<i>Pothos scandens</i>	පෝචා වැල්	N	LC	1										
18	Arecaceae	<i>Areca catechu</i>	පුවක්	I	NE			1								
19	Arecaceae	<i>Caryota urens</i>	කිතුල්	N	LC	1		1		1						
20	Aristolochiaceae	<i>Thottea siliquosa</i>	තාපසර බුලන්	N	LC					1						
21	Asparagaceae	<i>Dracaena thwaitesii</i>	වෙඩිකොකා ගස්	N	LC					1						

	Family	Scientific Name	Common Name	DS	CS	D46	D47	D48	D49	D50	D51	D52	D53	D54	D55	D56
96	Poaceae	<i>Urochloa maxima</i>	ගිණි නණ	I	NE				1		1					
97	Rhamnaceae	<i>Ziziphus oenopolia</i>	හීන් එරමිණියා	N	LC			1		1		1				
98	Rhamnaceae	<i>Ziziphus rugosa</i>	මහ එරමිණියා	N	NT	1		1		1	1					
99	Rhizophoraceae	<i>Carallia brachiata</i>	දවට	N	LC	1		1						1		
100	Rubiaceae	<i>Coffea arabica</i>	කෝපි	I	NE	1				1					1	
101	Rubiaceae	<i>Exallage auricularia</i> subsp. <i>auricularia</i>	ගැට කොළ	N	LC							1				
102	Rubiaceae	<i>Gaertnera vaginans</i>	ජේර නඹල	E	LC					1						
103	Rubiaceae	<i>Hedyotis fruticosa</i>	වැරණිය	N	LC			1						1		
104	Rubiaceae	<i>Mussaenda frondosa</i>	මුස්සන්ද	N	LC			1				1				
105	Rubiaceae	<i>Ophiorrhiza mungos</i>	දන් කැටිය	N	LC		1						1			
106	Rubiaceae	<i>Spermacoce latifolia</i>		I	NE			1								
107	Rubiaceae	<i>Spermacoce ocymifolia</i>		I	NE	1		1								
108	Rubiaceae	<i>Uncaria elliptica</i>		N	LC					1			1		1	
109	Rubiaceae	<i>Wendlandia bicuspidata</i>	රාවණ් ඉදල, වන ඉදල	N	LC							1	1	1		
110	Rutaceae	<i>Acronychia pedunculata</i>	අන්කෙන්ද	N	LC			1								
111	Rutaceae	<i>Toddalia asiatica</i>	කුඩුමිරිස්ස	N	LC					1						
112	Sapindaceae	<i>Pometia pinnata</i>	බුලු මොර, නා ඉඹුල්, ගල් මොර	N	LC			1		1						
113	Smilacaceae	<i>Smilax zeylanica</i>	හීන් කබරස	N	NT					1						
114	Solanaceae	<i>Solanum torvum</i>	නිබ්බටු	I	NE					1						
115	Symplocaceae	<i>Symplocos acuminata</i>	බෝඹු	N	LC	1		1	1	1	1	1			1	
116	Thymelaeaceae	<i>Gyrinops walla</i>	වල්ල පට්ට	N	VU									1		
117	Verbenaceae	<i>Lantana camara</i>	ගදපාන	I	NE						1		1			
118	Verbenaceae	<i>Stachytarpheta jamaicensis</i>	බලුනකුට	I	NE	1			1							

	Family	Scientific Name	Common Name	DS	CS	D46	D47	D48	D49	D50	D51	D52	D53	D54	D55	D56
119	Vitaceae	<i>Leea indica</i>	බුරුල්ල	N	LC		1				1					

Annex 2b. The list of animal species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **N** - Native, **I** - Introduced, **M** - Migrant. **CS** - Conservation Status (National Conservation Status or * Global Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** - Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** - Vulnerable. D97-D106; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	D46	D47	D48	D49	D50	D51	D52	D53	D54	D55	D56
Dragonflies																
1	Calopterygidae	<i>Neurobasis chinensis</i>	Oriental green-wing	N	VU			1		1						
2	Chlorocyphidae	<i>Libellago greeni</i>	Green's Gem	E	LC*			1		1					1	
3	Coenagrionidae	<i>Pseudagrion rubriceps</i>	Orange-faced Sprite	N	LC*			1		1						
4	Platycnemididae	<i>Copera marginipes</i>	Yellow Featherleg	N	LC					1						
5	Platycnemididae	<i>Elattoneura caesia</i>	Jungle Threadtail	E	NT*								1		1	
6	Platystictidae	<i>Ceylonosticta anamia</i>	Ana Mia's Shadowdamsel	E	VU*						1					
7	Platystictidae	<i>Ceylonosticta brincki</i>	Brinck's Shadowdamsel	E	LC*					1						
8	Platystictidae	<i>Ceylonosticta lankanensis</i>	Drooping Shadowdamsel	E	LC*						1		1		1	
9	Platystictidae	<i>Ceylonosticta bine</i>	Bine's Shadowdamsel	E	VU*						1		1			
10	Platystictidae	<i>Platysticta serendibica</i>	Serendib Forestdamsel	E	NT*		1						1			
11	Gomphidae	<i>Paragomphus henryi</i>	Brook Hooktail	E	NT*			1		1						
12	Libellulidae	<i>Tetrathemis yerburii</i>	Yerbury's Elf	E	VU*								1			
13	Libellulidae	<i>Orthetrum chrysis</i>	Spine-tufted Skimmer	N	VU			1		1		1			1	
14	Libellulidae	<i>Orthetrum glaucum</i>	Asian Skimmer	N	NT		1					1			1	1

	Family	Scientific Name	Common Name	DS	CS	D46	D47	D48	D49	D50	D51	D52	D53	D54	D55	D56
15	Libellulidae	<i>Orthetrum luzonicum</i>	Marsh Skimmer	N	NT		1									1
16	Libellulidae	<i>Neurothemis tullia</i>	Pied Parasol	N	LC		1	1		1	1					
17	Libellulidae	<i>Trithemis festiva</i>	Indigo Dropwing	N	VU		1	1		1		1				
18	Libellulidae	<i>Zygonyx iris</i>	Sri Lanka Cascader	N	LC*							1				
Butterflies																
1	Papilionidae	<i>Troides darsius</i>	Sri Lankan Birdwing	E	LC					1		1				
2	Papilionidae	<i>Papilio polytes</i>	Common Mormon	N	LC								1			
3	Papilionidae	<i>Papilio polymnestor</i>	Blue Mormon	N	LC					1						
4	Papilionidae	<i>Papilio clytia</i>	Mime	N	LC					1						
5	Papilionidae	<i>Graphium agamemnon</i>	Tailed Jay	N	LC					1		1	1			
6	Pieridae	<i>Leptosia nina</i>	Psyche	N	LC			1						1		
7	Pieridae	<i>Appias galene</i>	Sri Lankan Lesser Albatross	E	LC								1			
8	Pieridae	<i>Catopsilia pomona</i>	Lemon Emigrant	N	LC					1	1				1	1
9	Pieridae	<i>Eurema hecabe</i>	Common Grass Yellow	N	LC			1	1	1					1	1
10	Nymphalidae	<i>Tirumala limniace</i>	Blue Tiger	N	LC										1	
11	Nymphalidae	<i>Parantica aglea</i>	Glassy Tiger	N	LC		1									
12	Nymphalidae	<i>Euploea core</i>	Common Crow	N	LC						1					
13	Nymphalidae	<i>Phalanta phalantha</i>	Common Leopard	N	LC							1			1	
14	Nymphalidae	<i>Junonia atlites</i>	Grey Pansy	N	LC			1		1					1	1
15	Nymphalidae	<i>Junonia iphita</i>	Chocolate Soldier	N	LC										1	1
16	Nymphalidae	<i>Neptis hylas</i>	Common Sailor	N	LC		1	1		1	1	1	1	1	1	1
17	Nymphalidae	<i>Parthenos sylvia</i>	Clipper	N	LC					1	1					
18	Nymphalidae	<i>Orsotriaena medus</i>	Medus Brown	N	LC			1		1	1					
19	Nymphalidae	<i>Ypthima ceylonica</i>	White Four-ring	N	LC	1	1	1			1	1		1	1	1
20	Lycaenidae	<i>Jamides bochus</i>	Dark Cerulean	N	LC					1						
21	Lycaenidae	<i>Jamides coruscans</i>	Sri Lankan Cerulean	E	VU					1			1	1		
22	Lycaenidae	<i>Jamides celeno</i>	Common Cerulean	N	LC								1			

	Family	Scientific Name	Common Name	DS	CS	D46	D47	D48	D49	D50	D51	D52	D53	D54	D55	D56
23	Lycaenidae	<i>Caleta decidia</i>	Angled Pierrot	N	LC					1						
24	Lycaenidae	<i>Talicerca nyseus</i>	Red Pierrot	N	LC							1				
25	Hesperiidae	<i>Iambrix salsala</i>	Chestnut Bob	N	LC		1	1		1			1	1		1
26	Hesperiidae	<i>Taractrocera maevius</i>	Common Grass Dart	N	LC		1				1					
27	Hesperiidae	<i>Oriens goloides</i>	Common Dartlet	N	NT										1	
28	Hesperiidae	<i>Pelopidas agna</i>	Little Branded Swift	N	NT		1	1					1		1	
29	Hesperiidae	<i>Pelopidas conjuncta</i>	Conjoined Swift	N	VU	1										
Freshwater Fish																
1	Cyprinidae	<i>Garra ceylonensis</i>	Sri Lanka Stone Sucker	E	NT		1	1								
2	Danionidae	<i>Devario malabaricus</i>	Giant Danio	N	LC			1	1							
3	Nemacheilidae	<i>Schistura notostigma</i>	Sri Lanka Banded Mountain Loach	E	NT		1	1				1				
4	Channidae	<i>Channa kelaartii</i>	Brown Snakehead	N	NT			1								
Amphibians																
1	Bufonidae	<i>Duttaphrynus melanostictus</i>	Common toad	N	LC		1		1							
2	Ranidae	<i>Hydrophylax gracilis</i>	Sri Lanka wood frog	E	LC*					1						
3	Ranidae	<i>Indosylvirana temporalis</i>	Bronzed frog	E	NT*									1		
4	Nictibatrachidae	<i>Lankanectes corrugatus</i>	Corrugated water frog	E	NT*					1						
5	Rhacophoridae	<i>Pseudophilautus folicola</i>	Leaf dwelling shrub frog	E	VU*					1						
6	Rhacophoridae	<i>Pseudophilautus popularis</i>	Common shrub frog	E	VU*										1	
Reptiles																
1	Agamidae	<i>Calotes calotes</i>	Green forest Lizard	N	LC				1				1		1	
2	Agamidae	<i>Calotes versicolor</i>	Garden Lizard	N	LC		1	1							1	1
3	Agamidae	<i>Lyriocephalus scutatus</i>	Hump-nosed Lizard	E	VU*					1						

	Family	Scientific Name	Common Name	DS	CS	D46	D47	D48	D49	D50	D51	D52	D53	D54	D55	D56
17	Picidae	<i>Dinopium psarodes</i>	Lesser Sri Lanka Flameback	E	LC	1										
18	Picidae	<i>Dendrocopos nanus</i>	Brown-capped Woodpecker	N	LC					1						
19	Aegithinidae	<i>Aegithina tiphia</i>	Common Iora	N	LC	1										
20	Campephagidae	<i>Pericrocotus cinnamomeus</i>	Small Minivet	N	LC					1						
21	Campephagidae	<i>Hemipus picatus</i>	Bar-winged Flycatcher-shrike	N	LC		1			1	1					
22	Oriolidae	<i>Oriolus xanthornus</i>	Black-hooded Oriole	N	LC	1				1						
23	Dicruridae	<i>Dicrurus caerulescens</i>	White-bellied Drongo	N	LC	1		1								1
24	Rhipiduridae	<i>Rhipidura aureola</i>	White-browed Fantail	N	LC			1		1	1					
25	Corvidae	<i>Corvus splendens</i>	House Crow	N	LC										1	
26	Corvidae	<i>Corvus levaillantii</i>	Jungle Crow	N	LC				1							
27	Hirundinidae	<i>Hirundo hyperythra</i>	Sri Lanka swallow	E	LC	1										
28	Pycnonotidae	<i>Hypsipetes leucocephalus</i>	Asian Black Bulbul	N	LC		1	1		1		1		1		1
29	Pycnonotidae	<i>Pycnonotus melanicterus</i>	Black-crested Bulbul	E	LC	1		1	1	1		1	1			
30	Pycnonotidae	<i>Pycnonotus cafer</i>	Red-vented Bulbul	N	LC	1	1	1	1	1	1					
31	Pycnonotidae	<i>Iole indica</i>	Yellow-browed Bulbul	N	LC	1						1		1		
32	Sylviidae	<i>Orthotomus sutorius</i>	Common Tailorbird	N	LC	1		1		1	1	1		1	1	
33	Timaliidae	<i>Dumetia hyperythra</i>	Tawny-bellied Babbler	N	LC					1						
34	Timaliidae	<i>Turdoides affinis</i>	Yellow-billed Babbler	N	LC	1		1		1						
35	Zosteropidae	<i>Zosterops palpebrosus</i>	Oriental White Eye	N	LC	1	1	1		1	2	1				
36	Sturnidae	<i>Acridotheres tristis</i>	Common Myna	N	LC					1						
37	Sturnidae	<i>Gracula religiosa</i>	Hill Myna	N	LC					1						
38	Muscicapidae	<i>Saxicoloides fulicatus</i>	Indian Robin	N	LC			1		1						
39	Muscicapidae	<i>Copsychus saularis</i>	Oriental Magpie Robin	N	LC			1		1		1			1	

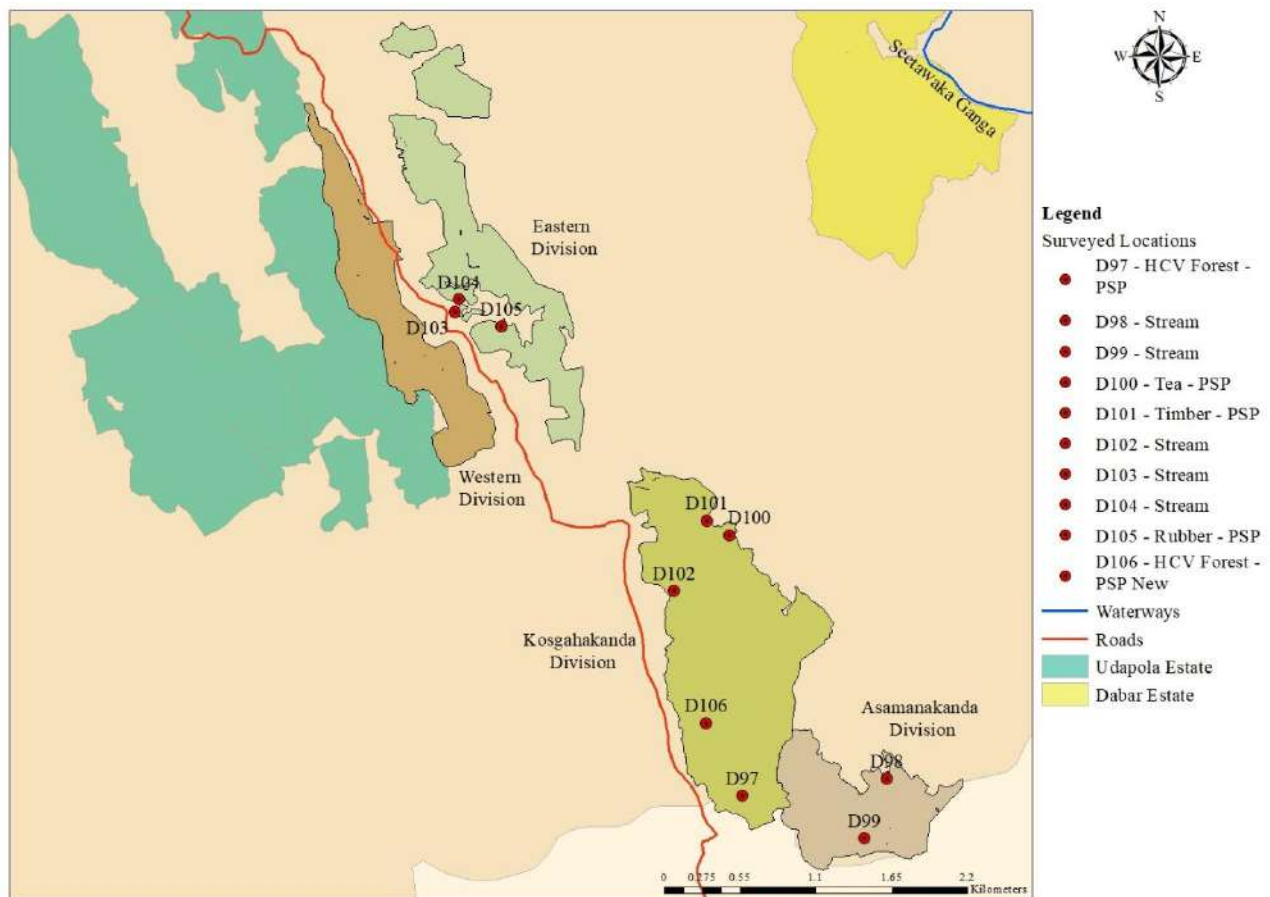
	Family	Scientific Name	Common Name	DS	CS	D46	D47	D48	D49	D50	D51	D52	D53	D54	D55	D56
40	Muscicapidae	<i>Cyornis tickelliae</i>	Tickell's Blue Flycatcher	N	LC					1				1	1	
41	Dicaeidae	<i>Dicaeum erythrorhynchos</i>	Pale-billed Flowerpecker	N	LC			1	1			1	1	1		1
42	Nectariniidae	<i>Nectarinia zeylonica</i>	Purple-rumped Sunbird	N	LC	1				1		1				
Mammals																
1	Manidae	<i>Manis crassicaudata</i>	Pangolin	N	NT			1								
2	Rhinolophidae	<i>Rhinolophus rouxii</i>	Rufous horse-shoe bat	N	LC									1		
3	Megadermatidae	<i>Megaderma spasma</i>	Lesser False Vampire bat	N	VU									1		
4	Pteropodidae	<i>Rousettus leschenaulti</i>	Fulvous fruit bat	N	LC					1						
5	Cercopithecidae	<i>Macaca sinica</i>	Sri Lanka toque monkey	E	LC			1								
6	Cercopithecidae	<i>Semnopithecus vetulus</i>	Sri Lanka Purple-faced langur	E	EN	1				1						
7	Suidae	<i>Sus scrofa</i>	Wild boar	N	LC	1		1		1				1		
8	Tragulidae	<i>Moschiola meminna</i>	Sri Lanka mouse-deer	N	LC			1								
9	Hystricidae	<i>Hystrix indica</i>	Porcupine	N	LC	1	1			1	1	1	1	1	1	1
10	Sciuridae	<i>Funambulus palmarum</i>	Palm squirrel	N	LC			1		1						
11	Sciuridae	<i>Ratufa macroura</i>	Giant squirrel	N	LC	1										
12	Mustelidae	<i>Lutra lutra</i>	Otter	N	VU					1						

Miyanawita Estate

1. Introduction

Miyanawita Estate is managed under the Miyanawita Group of Lalan Rubbers Pvt. Ltd. It is located in the Kegalle District and has a total extent of 583.11 ha. There are four divisions in the estate and the primary crops grown are rubber and tea while some extents of timber blocks are also present. There is an extensive conservation area in the Kosgahakanda Division covering 223.35 ha. This is the largest single conservation area in the entire group of plantations managed under the Lalan Rubbers Pvt. Ltd.

Miyanawita estate is located in the wet climatic zone of the country. Ecologically the area is near the conjunction of three floristic zones, i.e., Northern Wet Lowland Floristic Zone, Sinharaja and Rathnapura Floristic Zone and Foothills of Adam's Peak and Ambagamuwa Floristic Zone. The estate is located in the Kelani River basin.



Map of Miyanawita Estate and distribution of sampling sites (Table XX)

2. Methodological approach

2.1 Study locations: Altogether, 10 sampling sites were surveyed, 5 in Kosgahakanda Division, 2 in Asamanakanda Division and 3 in the East Division. These include 2 HCV Forest Sites, one Timber Block, one Rubber Plot, one Tea Plot and five Stream sites. A summary of locations sampled are given in Table 1 and the distribution of the sampling plots within the Miyanawita estate is shown in Figure 1.

Table 1. The number of sites sampled within the Miyanawita Estate

Division	Site	Site type	Site code	Latitude	Longitude	Ele. (m)
Kosgahakanda	Kosgahakanda HCV	Forest - PSP	D97	6.85391	80.37822	382
	Tea/02	Tea - PSP	D100	6.87089	80.37740	333
	Terpentine	Timber - PSP	D101	6.87184	80.37593	340
	R/01	Stream	D102	6.86726	80.37381	249
	Kosgahakanda HCV	Forest - PSP new	D106	6.85864	80.37586	321
Asamanakanda	R01	Stream	D98	6.85500	80.38764	505
	R02	Stream	D99	6.85113	80.38618	616
East	R01	Stream	D103	6.88546	80.35949	163
	R06	Stream	D104	6.88626	80.35977	165
	Rubber 2011	Rubber - PSP	D105	6.88448	80.36251	195

2.2 Study Period: This study was undertaken in January 2022 covering the dry season of the area.

2.3 Study techniques: Please refer Chapter 1

3. Key Findings of the Biodiversity Assessment

Based on the results of the assessments conducted in the Miyanawita estate 173 species of plants and 131 species of animals were recorded. This included 43 species of endemic fauna, 25 species of endemic flora, 19 species of threatened fauna and 24 species of threatened flora. A summary of the species recorded under different taxonomic groups are presented in table 2. The detailed list of plants and animals observed during this study including their distribution and threat status is given in Annex 2a and 2b.

Table 2. Summary of the total fauna and flora recorded during the assessment.

Abbreviations used: CR - Critically Endangered; EN - Endangered; VU – Vulnerable, NT - Near Threatened, DD – Data Deficient.

Taxa	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Dragonflies	11	7	-	-	-	3	3	-
Butterflies	30	2	-	-	-	2	3	-
Freshwater Fish	7	5	-	-	-	3	2	-
Amphibians	9	9	-	-	2	3	4	-
Reptiles	15	8	-	-	1	-	2	1
Birds	52	10	7*	-	1	1	3	-
Mammals	7	2	-	-	1	2	-	-
Sub-Total (Fauna)	131	43	0	0	5	14	17	1
Plants	173	25	58	2	4	18	10	1
Total (Species)	304	68	58	2	9	32	27	2

4. Important Findings of the Assessment

4.1. Critical Species

1. Long-snouted Tree Frog (*Taruga longinasus*)

A rare and an endemic frog currently considered as an Endangered species. Distributed in the wet zone in rain forest habitats and well vegetated anthropogenic areas in the vicinity. It was observed in the Kosgahakanda HCV forest during the night sampling session.



Long-snouted Tree Frog. Kosgahakanda Division. Image: AS

2. *Lasianthus thwaitesii*

An endemic shrub. Branchlets densely tomentose with spreading hairs. Grows in undisturbed forests in wet lowlands and submontane regions in the country. It is a Critically Endangered species and was observed in the Kosgahakanda HCV forest (Site D106).



Lasianthus thwaitesii. Kosgahakanda Division. Image: NC

3. *Barleria courtallica*

A semi-shrubby herb. Growing in the shade of submontane or mid-country wet evergreen forests up to 1200m. It is a native species and flowering occurs between November to January. This Critically Endangered species was observed in the Kosgahakanda HCV Forest (Site D97).



Barleria courtallica. Kosgahakanda Division. Image: NC

4.2. Critical Habitats

1. Kosgahakanda HCV Forest

The HCV Forest in the Kosgahakanda Division of Miyanawita estate is one of the most critical habitats in the plantations managed under the Lalan Rubbers Pvt. Ltd. The habitat represents a secondary forest grown in an abandoned plantation land and covers an extensive area of 223.35 ha. Flame-striped Jungle Squirrel, Long-snouted Tree frog, Muller's Shrub Frog, Sri Lanka Golden-backed Frog and Hollow-snouted Shrub Frog, the semi-slug *Ratnadvipia karui* and the Critically Endangered plant species *Barleria courtallica* and *Lasianthus thwaitesii* var. *nitidus*, are among the threatened and endemic species reported from the forest. The area is also an important catchment for the streams supporting aquatic biodiversity in the landscape.



Kosgahakanda HCV Forest at site D97



Kosgahakanda HCV Forest at site D106.

5. Conclusions and Recommendations

Results of the present assessment indicates that the total species richness and the number of endemic and threatened species recorded remains equal or higher in most instances compared to previous survey done in 2016. It should be noted that some of the species recorded during the previous assessments have not been recorded during the present survey and number of new species including endemic and threatened species have been newly recorded during the present assessment. Therefore, based on this data it can be safely concluded that the species richness as well as number of critical species (endemic and threatened species) have not undergone a decline between the two assessments.

Based on the findings of this assessment and the field observations the following set of recommendations can be made.

1. The extensive conservation area in the Kosgahakanda Division covers an area of 223.35 ha. As this is a considerably large extent in the landscape, it is recommended to establish an additional Permanent Sampling Plot to have a better representation of the habitat. A proposed location (Site D109) has been sampled during the assessment and it should be properly demarcated on ground and maintained for periodic monitoring to take place.
2. Please refer the list of recommendations in the main report for additional recommendations.

	Family	Scientific Name	Common Name	DS	CS	D97	D98	D99	D100	D101	D102	D103	D104	D105	D106
19	Araceae	<i>Syngonium angustatum</i>	වැල් කොහිල	I	NE						1	1	1	1	
20	Araliaceae	<i>Schefflera emarginata</i>	හීන් ඉත්ත වැල්	E	VU	1									
21	Arecaceae	<i>Areca catechu</i>	පුවක්	I	NE	1	1			1					
22	Arecaceae	<i>Areca triandra</i>		I	NE					1					
23	Arecaceae	<i>Caryota urens</i>	කිතුල්	N	LC			1		1	1	1		1	1
24	Aristolochiaceae	<i>Aristolochia indica</i>	සප්සද	N	LC			1							1
25	Aristolochiaceae	<i>Thottea siliquosa</i>	නාපසර බුලත්	N	LC	1									1
26	Asparagaceae	<i>Dracaena thwaitesii</i>	වෙඩිකොකා ගස්	N	LC	1									1
27	Asphodelaceae	<i>Dianella ensifolia</i>	මොණර පෙනත්	N	LC			1							
28	Asteraceae	<i>Ageratum conyzoides</i>	හුලන්තලා	I	NE		1		1		1		1		
29	Asteraceae	<i>Bidens pilosa</i>	වැල් තේ කොළ	I	NE				1						
30	Asteraceae	<i>Chromolaena odorata</i>	පොඩි පිඤ්ඤොමරන්	I	NE		1				1	1		1	
31	Asteraceae	<i>Crassocephalum crepidioides</i>		I	NE		1		1			1			
32	Asteraceae	<i>Cyanthillium cinereum</i>	මොණරකුඩුමිඛිය	N	LC								1		
33	Asteraceae	<i>Erigeron karvinskianus</i>		I	NE				1						
34	Asteraceae	<i>Mikania cordata</i>	වතු පාළු	I	NE		1			1		1	1		
35	Asteraceae	<i>Sphagneticola trilobata</i>	උදය කුමාර්	I	NE		1		1		1		1		
36	Asteraceae	<i>Struchium sparganophorum</i>		I	NE								1		
37	Begoniaceae	<i>Begonia hirtella</i>	හක් ඇඹල	I	NE			1					1		
38	Calophyllaceae	<i>Mesua ferrea</i>	නා, නාග	N	LC	1									
39	Campanulaceae	<i>Lobelia zeylanica</i>		N	LC			1					1		
40	Cannabaceae	<i>Trema orientale</i>	ගඩුඹ	N	LC			1							

	Family	Scientific Name	Common Name	DS	CS	D97	D98	D99	D100	D101	D102	D103	D104	D105	D106
41	Centroplacaceae	<i>Bhesa ceylanica</i>	පෙලුන්	E	LC	1				1					1
42	Cleomaceae	<i>Cleome rutidosperma</i>		N	LC				1					1	
43	Clusiaceae	<i>Garcinia hermonii</i>	මහ මඩොල්, කන ගොරකා	E	NT	1									
44	Clusiaceae	<i>Garcinia quaesita</i>	ගොරකා, රන් ගොරකා, කන ගොරකා	E	LC	1									
45	Combretaceae	<i>Terminalia zeylanica</i>	හම්පලද	N	NT	1									
46	Commelinaceae	<i>Commelina diffusa</i>	ගිරා පළා, තණ පළා	N	LC							1	1		
47	Commelinaceae	<i>Commelina indehiscens</i>	ගිරා පළා	N	NT				1					1	
48	Convolvulaceae	<i>Argyreia thwaitesii</i>	මා බඳ, ගිරිනිල්ල	E	LC										1
49	Convolvulaceae	<i>Camonea pilosa</i>	කිරි මදු, මහ මදු	N	LC		1	1							
50	Cornaceae	<i>Alangium glandulosum</i>	රැක් අඟුණ, අලඟ	N	VU										1
51	Costaceae	<i>Hellenia speciosa</i>	තෙඹු	N	LC						1		1		
52	Cucurbitaceae	<i>Momordica charantia</i>	බටු කරවිල	N	LC				1						
53	Cucurbitaceae	<i>Zanonia indica</i>	වල් රසකිඳ	N	VU	1									
54	Dilleniaceae	<i>Dillenia suffruticosa</i>	පර	I	NE					1					1
55	Dilleniaceae	<i>Schumacheria castaneifolia</i>	මහ කැකිරිවරා	E	LC	1									1
56	Dioscoreaceae	<i>Dioscorea oppositifolia</i>	හිරිතල	N	NT	1									
57	Ebenaceae	<i>Diospyros insignis</i>	ගෝන, පොරොව මාර, වල් මැදිරිය	N	LC										1
58	Ebenaceae	<i>Diospyros toposia</i>	කළුවැල්ල, කහ කැල	N	VU	1									
59	Euphorbiaceae	<i>Croton aromaticus</i>	වැල් කැප්පෙටියා	N	LC										1
60	Euphorbiaceae	<i>Croton hirtus</i>	ගං වෙද	I	NE				1						
61	Euphorbiaceae	<i>Hevea brasiliensis</i>	රබර්	I	NE		1				1	1	1	1	

	Family	Scientific Name	Common Name	DS	CS	D97	D98	D99	D100	D101	D102	D103	D104	D105	D106
85	Lauraceae	<i>Cryptocarya wightiana</i>	ගල් මොර, ගුළු මොර	N	NT	1		1							
86	Lauraceae	<i>Litsea longifolia</i>	රත් කැලිය	E	DD			1		1		1			1
87	Lauraceae	<i>Neolitsea cassia</i> var. <i>cassia</i>	දවුල් කුරුඳු	N	LC	1									1
88	Lauraceae	<i>Persea americana</i>	අලිගැට පේර, අලි පේර, ඇන් පේර	I	NE		1								
89	Linderniaceae	<i>Vandellia diffusa</i>		I	NE			1							
90	Magnoliaceae	<i>Magnolia champaca</i>	සපු	I	NE		1								1
91	Malpighiaceae	<i>Hiptage benghalensis</i>	පුවක් ගෙඩිය වැල්	N	LC	1									
92	Malvaceae	<i>Sida rhombifolia</i> subsp. <i>rhombifolia</i>	කොටිකන් බැබිල	N	LC		1								
93	Malvaceae	<i>Durio zibethinus</i>	දුරියන්	I	NE		1				1				
94	Malvaceae	<i>Grewia carpinifolia</i>	වැල් කැලිය, වැල් මැදිය	N	LC										1
95	Malvaceae	<i>Triumfetta pentandra</i>	අපල, කපු කිනිස්ස	N	LC							1			
96	Melastomataceae	<i>Miconia crenata</i>	කටකළු බෝවිටියා	I	NE			1	1	1	1	1	1	1	1
97	Melastomataceae	<i>Sonerila silvatica</i>		E	VU	1									
98	Meliaceae	<i>Aglaiia apiocarpa</i>	වල් රඹුටන්, දිය පුවඟු	N	LC	1									
99	Meliaceae	<i>Swietenia macrophylla</i>	මැහෝගනී	I	NE								1		
100	Menispermaceae	<i>Cyclea peltata</i>	කැහිපිත්තං	N	LC	1		1				1			1
101	Moraceae	<i>Artocarpus altilis</i>	රට දෙල්, දෙල්	I	NE		1				1				
102	Moraceae	<i>Artocarpus heterophyllus</i>	කොස්	I	NE	1		1							1
103	Moraceae	<i>Artocarpus nobilis</i>	වල් දෙල්	E	LC	1	1								
104	Moraceae	<i>Ficus exasperata</i>	බු නෙදිය	N	LC						1				
105	Moraceae	<i>Ficus hispida</i>	කොට දිඹුල	N	LC										1
106	Moraceae	<i>Ficus laevis</i>		N	LC	1									
107	Moraceae	<i>Ficus religiosa</i>	බෝ	I	NE								1		

	Family	Scientific Name	Common Name	DS	CS	D97	D98	D99	D100	D101	D102	D103	D104	D105	D106
170	Verbenaceae	<i>Stachytarpheta cayennensis</i>		I	NE				1						
171	Verbenaceae	<i>Stachytarpheta jamaicensis</i>	බලුනකුට	I	NE						1		1		
172	Vitaceae	<i>Tetrastigma nilagiricum</i>		N	LC	1									1
173	Vitaceae	<i>Leea indica</i>	බුරුල්ල	N	LC			1							

Annex 2b. The list of animal species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **N** - Native, **I** - Introduced. **CS** - Conservation Status (National Conservation Status or * Global Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** - Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** - Vulnerable. D97-D106; Sites visited (Table XX).

	Family	Scientific Name	Common Name	DS	CS	D97	D98	D99	D100	D101	D102	D103	D104	D105	D106
Dragonflies															
1	Euphaeidae	<i>Euphaea splendens</i>	Shining Gossamerwing	E	LC*	1									1
2	Platycnemididae	<i>Elattoneura centralis</i>	Dark-glittering Threadtail	E	LC*	1	1								
3	Platycnemididae	<i>Elattoneura tenax</i>	Red-striped Threadtail	E	VU*	1									
4	Platystictidae	<i>Ceylonosticta brincki</i>	Brinck's Shadowdamsel	E	LC*										1
5	Platystictidae	<i>Ceylonosticta lankanensis</i>	Drooping Shadowdamsel	E	LC*	1					1				
6	Platystictidae	<i>Ceylonosticta bine</i>	Bine's Shadowdamsel	E	VU*	1									
7	Platystictidae	<i>Platysticta serendibica</i>	Serendib Forestdamsel	E	NT*						1				
8	Libellulidae	<i>Orthetrum glaucum</i>	Asian Skimmer	N	NT	1									
9	Libellulidae	<i>Orthetrum luzonicum</i>	Marsh Skimmer	N	NT							1			

	Family	Scientific Name	Common Name	DS	CS	D97	D98	D99	D100	D101	D102	D103	D104	D105	D106
10	Libellulidae	<i>Trithemis festiva</i>	Indigo Dropwing	N	VU	1	1								
11	Libellulidae	<i>Pantala flavescens</i>	Wandering Glider	N	LC			1							
Butterflies															
1	Papilionidae	<i>Papilio polytes</i>	Common Mormon	N	LC	1									
2	Papilionidae	<i>Papilio polymnestor</i>	Blue Mormon	N	LC	1									
3	Pieridae	<i>Leptosia nina</i>	Psyche	N	LC	1	1	1	1	1	1				1
4	Pieridae	<i>Delias eucharis</i>	Jezebel	N	LC			1		1					
5	Pieridae	<i>Catopsilia pomona</i>	Lemon EM	N	LC	1	1	1							
6	Pieridae	<i>Catopsilia pyranthe</i>	Mottled EM	N	LC		1								
7	Pieridae	<i>Eurema hecabe</i>	Common Grass Yellow	N	LC	1	1	1							1
8	Pieridae	<i>Eurema blanda</i>	Three-Spot Grass Yellow	N	LC		1								
9	Pieridae	<i>Eurema ormistoni</i>	Sri Lankan One-Spot Grass Yellow	E	VU	1									1
10	Nymphalidae	<i>Phalanta phalantha</i>	Common Leopard	N	LC		1								
11	Nymphalidae	<i>Hypolimnas bolina</i>	Great Eggfly	N	LC	1									
12	Nymphalidae	<i>Junonia almana</i>	Peacock Pansy	N	LC		1								
13	Nymphalidae	<i>Neptis hylas</i>	Common Sailor	N	LC	1	1	1				1	1	1	
14	Nymphalidae	<i>Neptis jumbah</i>	Chestnut Streaked Sailor	N	LC	1									
15	Nymphalidae	<i>Parthenos sylvia</i>	Clipper	N	LC	1									1
16	Nymphalidae	<i>Orsotriaena medus</i>	Medus Brown	N	LC									1	
17	Nymphalidae	<i>Mycalesis mineus</i>	Dark-Brand Bushbrown	N	LC								1		
18	Nymphalidae	<i>Mycalesis perseus</i>	Common Bushbrown	N	LC							1			
19	Nymphalidae	<i>Ypthima ceylonica</i>	White Four-ring	N	LC	1		1	1						
20	Nymphalidae	<i>Elymnias hypermnestra</i>	Common Palmfly	N	LC	1									
21	Lycaenidae	<i>Spalgis epeus</i>	Apefly	N	LC				1						
22	Lycaenidae	<i>Nacaduba hermus</i>	Pale Four Lineblue	N	NT	1									
23	Lycaenidae	<i>Prosotas nora</i>	Common Lineblue	N	LC		1	1							

	Family	Scientific Name	Common Name	DS	CS	D97	D98	D99	D100	D101	D102	D103	D104	D105	D106
6	Rhacophoridae	<i>Pseudophilautus sarasinorum</i>	Muller's shrub frog	E	EN*	1									
7	Rhacophoridae	<i>Pseudophilautus sordidus</i>	Grubby Shrub Frog	E	NT*	1									
8	Rhacophoridae	<i>Pseudophilautus stictomerus</i>	Orange canthal shrub frog	E	VU*	1									
9	Rhacophoridae	<i>Taruga longinasus</i>	Long-snouted tree frog	E	EN*	1									
Reptiles															
1	Agamidae	<i>Calotes calotes</i>	Green forest Lizard	N	LC	1	1	1				1	1	1	
2	Agamidae	<i>Calotes versicolor</i>	Garden Lizard	N	LC	1		1	1						
3	Agamidae	<i>Otocryptis wiegmanni</i>	Sri Lankan Kangaroo Lizard	E	LC*	1				1					1
4	Gekkonidae	<i>Cnemaspis molligodai</i>	Molligoda's Daygecko	E	EN	1									
5	Gekkonidae	<i>Cnemaspis silvula</i>	Forest Daygecko	E	LC*	1									
6	Scincidae	<i>Lankascincus cf. gansi</i>	Gans's Lanka Skink	E	LC*										1
7	Scincidae	<i>Nessia burtonii</i>	Three-toed Snake Skink	E	NT*										1
8	Scincidae	<i>Eutropis greeri</i>	Greer's Skink	E	DD*	1									
9	Colubridae	<i>Ptyas mucosa</i>	Sri Lankan Rat Snake	N	LC								1		
10	Elapidae	<i>Naja naja</i>	Indian Cobra	N	LC*	1							1		
11	Pythonidae	<i>Python molurus</i>	Rock Python	N	LC	1									
12	Viperidae	<i>Daboia russelii</i>	Indian Russell's Viper	N	LC*								1		
13	Viperidae	<i>Hypnale hypnale</i>	Merrem's Hump-nosed Pit Viper	N	LC*	1							1		
14	Viperidae	<i>Hypnale zara</i>	Wall's Hump-nosed Pit Viper	E	NT*	1									
15	Viperidae	<i>Trimeresurus trigonocephalus</i>	Sri Lanka Green Pit Viper	E	LC*	1									
Birds															
1	Accipitridae	<i>Ictinaetus malayensis</i>	Black Eagle	N	NT			1							

	Family	Scientific Name	Common Name	DS	CS	D97	D98	D99	D100	D101	D102	D103	D104	D105	D106
2	Accipitridae	<i>Spilornis cheela</i>	Crested Serpent-eagle	N	LC									1	
3	Accipitridae	<i>Pernis ptilorhyncus</i>	Oriental Honey-buzzard	N	NT		1								
4	Accipitridae	<i>Accipiter badius</i>	Shikra	N	LC									1	
5	Columbidae	<i>Chalcophaps indica</i>	Emerald Dove	N	LC	1									
6	Columbidae	<i>Ducula aenea</i>	Green Imperial-Pigeon	N	LC	1					1		1		1
7	Columbidae	<i>Treron pompadora</i>	Sri Lanka Green-Pigeon	E	LC	1					1				1
8	Columbidae	<i>Stigmatopelia chinensis</i>	Spotted Dove	N	LC		1					1	1		1
9	Psittacidae	<i>Psittacula eupatria</i>	Alexandrine Parakeet	N	LC						1				
10	Psittacidae	<i>Psittacula cyanocephala</i>	Plum-headed Parakeet	N	NT										1
11	Psittacidae	<i>Loriculus beryllinus</i>	Sri Lanka Hanging Parrot	E	LC	1	1	1	1	1		1	1	1	1
12	Cuculidae	<i>Cuculus varius</i>	Common Hawk-cuckoo	N	EN							1		1	
13	Apodidae	<i>Cypsiurus balasiensis</i>	Asian Palm-swift	N	LC		1								
14	Hemiprocnidae	<i>Hemiprocne coronata</i>	Crested Treeswift	N	LC			1	1						
15	Meropidae	<i>Merops leschenaulti</i>	Chestnut-headed Bee-eater	N	LC			1		1			1		
16	Meropidae	<i>Merops philippinus</i>	Blue-tailed Bee-eater	M	LC*					1					
17	Bucerotidae	<i>Ocyrceros gingalensis</i>	Sri Lanka Grey Hornbill	E	LC	1									
18	Ramphastidae	<i>Megalaima zeylanica</i>	Brown-headed Barbet	N	LC		1								
19	Ramphastidae	<i>Megalaima rubricapillus</i>	Sri Lanka Barbet	E	LC	1		1	1	1	1	1			1
20	Ramphastidae	<i>Megalaima flavifrons</i>	Sri Lanka Yellow-fronted Barbet	E	LC	1	1	1	1	1	1	1	1	1	1
21	Picidae	<i>Dinopium psarodes</i>	Lesser Sri Lanka Flameback	E	LC		1								
22	Campephagidae	<i>Hemipus picatus</i>	Bar-winged Flycatcher-shrike	N	LC	1	1					1			
23	Campephagidae	<i>Coracina melanoptera</i>	Black-headed Cuckoo-shrike	N	LC				1						

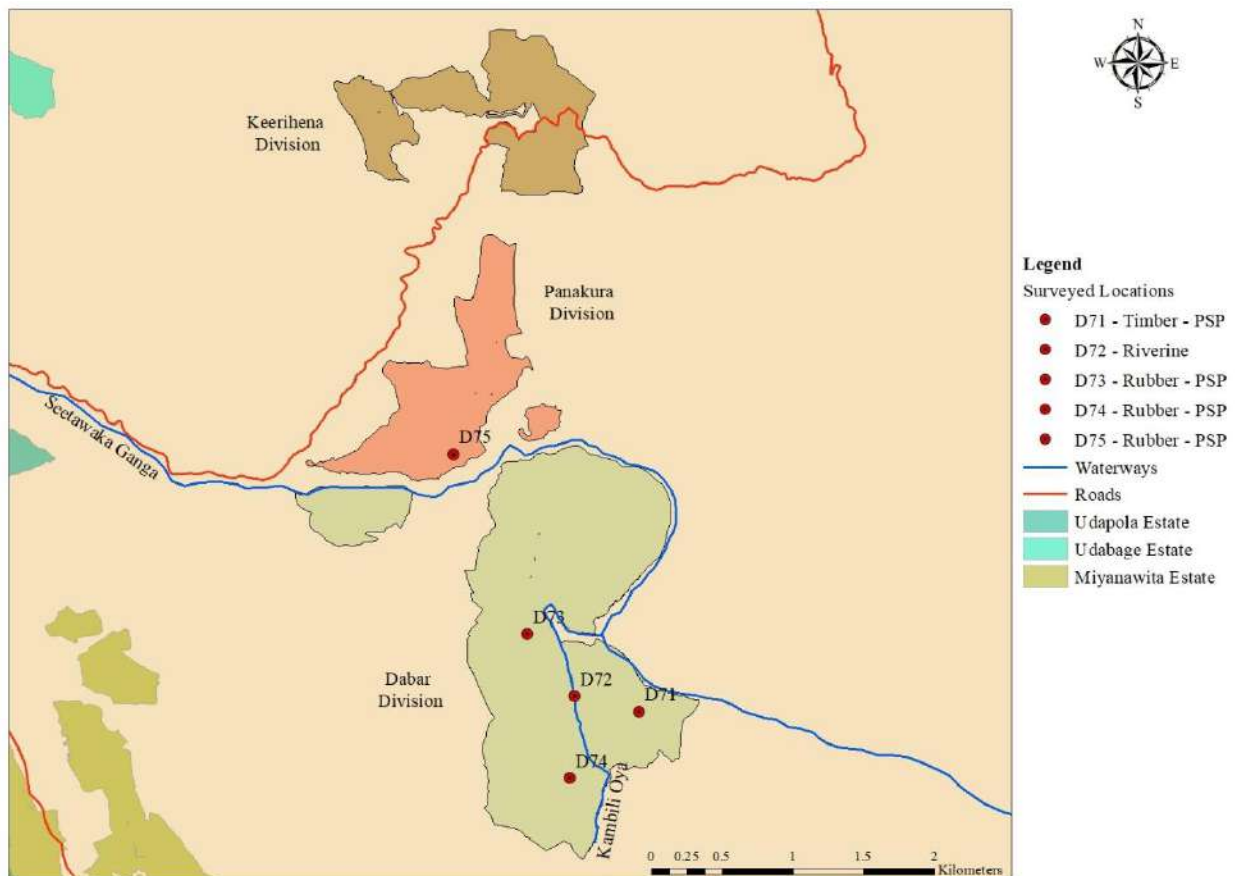
	Family	Scientific Name	Common Name	DS	CS	D97	D98	D99	D100	D101	D102	D103	D104	D105	D106
46	Muscicapidae	<i>Cyornis tickelliae</i>	Tickell's Blue Flycatcher	N	LC	1									1
47	Muscicapidae	<i>Muscicapa dauurica</i>	Asian Brown Flycatcher	M	LC*				1						
48	Muscicapidae	<i>Muscicapa muttui</i>	Brown-breasted Flycatcher	M	LC*					1					
49	Dicaeidae	<i>Dicaeum erythrorhynchos</i>	Pale-billed Flowerpecker	N	LC	1	1								
50	Nectariniidae	<i>Nectarinia zeylonica</i>	Purple-rumped Sunbird	N	LC		1						1		1
51	Nectariniidae	<i>Nectarinia asiatica</i>	Purple Sunbird	N	LC		1								
52	Estrildidae	<i>Lonchura striata</i>	White-rumped Munia	N	LC										1
Mammals															
1	Cercopithecidae	<i>Semnopithecus vetulus</i>	Sri Lanka Purple-faced langur	E	EN										1
2	Viverridae	<i>Paradoxurus hermaphoditus</i>	Palm cat	N	LC										1
3	Suidae	<i>Sus scrofa</i>	Wild boar	N	LC			1		1	1	1	1		1
4	Hystricidae	<i>Hystrix indica</i>	Porcupine	N	LC	1						1			1
5	Sciuridae	<i>Funambulus palmarum</i>	Palm squirrel	N	LC		1								
6	Sciuridae	<i>Funambulus layardi</i>	Sri Lanka flame-striped jungle squirrel	E	VU	1									
7	Mustelidae	<i>Lutra lutra</i>	Otter	N	VU						1				

Dabar Estate

1. Introduction

Dabar Estate is managed under the Miyanawita Group of Lalan Rubbers Pvt. Ltd. It is located in the Kegalle District and has a total extent of 389.4 ha. There are three divisions in the estate and the primary crop grown is rubber and some timber blocks are also present. There are no conservation forests or HCV sites recognized in the estate.

Dabar estate is located in the wet climatic zone of the country. Ecologically the area is near the conjunction of three floristic zones, i.e., Northern Wet Lowland Floristic Zone, Sinharaja and Rathnapura Floristic Zone and Foothills of Adam's Peak and Ambagamuwa Floristic Zone. The estate is located in the Kelani River basin and Seethawaka Ganga, a tributary of the Kelani River, flows across the estate.



Map of Dabar Estate and distribution of sampling sites (Table XX)

2. Methodological approach

2.1 Study locations: Altogether, 5 sampling sites were surveyed, 4 in the Dabar Division and the other in the Panakura Division. These include one Timber Block, One Riverine site (a new sampling plot) and three sites in Rubber cultivated areas. A summary of locations sampled are given in Table 1 and the distribution of the sampling plots within the Dabar estate is shown in Figure 1.

Table 1. The number of sites sampled within the Dabar Estate

Division	Site	Site type	Site code	Latitude	Longitude	Ele (m)
Dabar	Timber - Albizia	Timber - PSP	D71	6.89762	80.39239	219
	Kambili Oya	Riverine	D72	6.89858	80.38831	188
	Rubber 2012	Rubber - PSP	D73	6.90253	80.38528	208
	Rubber 2007	Rubber - PSP	D74	6.89339	80.38799	307
Panakura	PK RI/7A	Rubber - PSP	D75	6.91395	80.38058	189

2.2 Study Period: This study was undertaken in July 2021 covering the wet season of the area.

2.3 Study techniques: Please refer Chapter 1.

3. Key Findings of the Biodiversity Assessment

Based on the results of the assessments conducted in the Dabar estate 81 species of plants and 94 species of animals were recorded. This included 25 species of endemic fauna, 13 species of endemic flora, 13 species of threatened fauna and 6 species of threatened flora. A summary of the species recorded under different taxonomic groups are presented in table 2. The detailed list of plants and animals observed during this study including their distribution and threat status is given in Annex 2a and 2b.

Table 2. Summary of the total fauna and flora recorded during the assessment.

Abbreviations used: **CR** - Critically Endangered; **EN** - Endangered; **VU** – Vulnerable, **NT** - Near Threatened, **DD** – Data Deficient.

Taxa	Total Species	Endemic Species	Exotic Species	Conservation Status				
				CR	EN	VU	NT	DD
Dragonflies	12	6	-	1	-	5	1	-
Butterflies	29	4	1	-	-	3	3	-
Freshwater Fish	9	3	-	-	-	2	2	-
Amphibians	3	3	-	-	-	1	1	-
Reptiles	5	2	-	-	-	1	-	-
Birds	32	6	-	-	-	-	4	-
Mammals	4	1	-	-	-	-	-	-
Sub-Total (Fauna)	94	25	1	1	0	12	11	0
Plants	81	13	27	-	-	6	4	1
Total (Species)	175	38	28	1	0	18	15	1

4. Important Findings of the Assessment

4.1. Critical Species

1. Flint's Cruiser (*Macromia flinti*)

One specimen of the dragonfly Flint's Cruiser was observed in a riverine habitat at Dabar Estate. This species is known only from the original type specimen collected in 1970 from Uggalkalthota and a few unpublished observations. Therefore, this is the first confirmed record of this species after 50 years. The global conservation status of the species is Critically

Endangered while in the national conservation assessment done in 2012, the species was listed as a Data Deficient species due to lack of records. Based on the known observations, the habitat of Flint's Cruiser is medium to large rivers with a dense riparian vegetation and thus it is important to protect such habitats in the plantation areas to conserve the species.



Flint's Cruiser. Dabar Division. Image: AS

4.2. Critical Habitats

1. Riverine habitats of Dabar Estate (Site D72)

The dense riverine area and adjoining abandoned timber block provides an important riverine habitat for multiple species. The globally Critically Endangered Flint's Cruiser was observed at this site. In addition to Flint's Cruiser, three more endemic dragonflies, three endemic freshwater fish, one endemic lizard, 3 endemic birds and 6 endemic plant species was observed in the river and associated vegetation. Therefore, it is recommended to conserve as much area of the riverine habitat as possible to support Flint's Cruiser and other threatened and endemic species that are present in this habitat.



Critical riverine habitat of Kambili Oya in Dabar Division (Site D72)

5. Conclusions and Recommendations

Results of the present assessment indicates that the total species richness and the number of endemic and threatened species recorded remains equal or higher in most instances compared to previous survey done in 2016. It should be noted that some of the species recorded during the previous assessments have not been recorded during the present survey and number of new species including endemic and threatened species have been newly recorded during the present assessment. Therefore, based on this data it can be safely concluded that the species richness as well as number of critical species (endemic and threatened species) have not undergone a decline between the two assessments.

Based on the findings of this assessment and the field observations the following set of recommendations can be made.

1. The riverine habitat of the Kambili Oya river at site D89 is recommended to be conserved and protected.
2. A PSP can be established to ensure long term monitoring of the habitat and its quality.

3. Any other riverine areas are also encouraged to be conserved as they provide critical habitats for the rare and threatened species observed in the area.
4. At present the PSPs are not distributed in a representative manner within the three divisions. Therefore, in future surveys it is recommended that at least one PSP is in Panakura and two PSPs in Keerihena division are established.
5. Please refer the list of recommendations in the main report for additional recommendations.

Annex 2a. The list of plant species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **I** - Introduced, **N** - Native. **CS** - Conservation Status (National Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** - Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** - Vulnerable. **D71-D75**; Sites visited (Table XX).

No	Family	Scientific Name	Common Name	DS	CS	D7 1	D7 2	D7 3	D7 4	D7 5
1	Acanthaceae	<i>Asystasia variabilis</i>	ගඳ පුරක්	N	LC		1	1		1
2	Acanthaceae	<i>Nicotaba betonica</i>	සුදු පුරක්	N	LC					1
3	Acanthaceae	<i>Strobilanthes lupulina</i>	නෙළු	N	LC	1	1			
4	Acanthaceae	<i>Strobilanthes zeylanica</i>	නෙළු	E	VU		1			
5	Apocynaceae	<i>Alstonia macrophylla</i>	හවරි නුග	I	NE	1		1	1	1
6	Apocynaceae	<i>Alstonia scholaris</i>	රක් අත්තන	N	LC	1	1	1	1	1
7	Apocynaceae	<i>Anodendron parviflorum</i>	දුල්, ගැරඩි දුල්	N	VU				1	
8	Apocynaceae	<i>Tabernaemontana dichotoma</i>	දිවි කදුරු	E	LC	1				
9	Araceae	<i>Colocasia esculenta</i>	ගහල	N	LC	1				
10	Araceae	<i>Pothos scandens</i>	පෝචා වැල්	N	LC					1
11	Araceae	<i>Syngonium angustatum</i>	වැල් කොහිල	I	NE			1		
12	Arecaceae	<i>Caryota urens</i>	කිතුල්	N	LC	1	1	1	1	
13	Aristolochiaceae	<i>Thottea siliquosa</i>	තාපසර බුලත්	N	LC	1				
14	Asteraceae	<i>Ageratum conyzoides</i>	හුලන්තලා	I	NE			1		
15	Asteraceae	<i>Chromolaena odorata</i>	පොඩි සිඤ්ඤොමරන්	I	NE			1		
16	Asteraceae	<i>Cyanthillium cinereum</i>	මොණරකුඩුමිබිය	N	LC				1	1
17	Asteraceae	<i>Emilia sonchifolia</i>	කඩුපහර	N	LC				1	
18	Asteraceae	<i>Mikania cordata</i>	වතු පාළු	I	NE	1		1	1	
19	Asteraceae	<i>Sphagneticola trilobata</i>	උදය කුමාරි	I	NE	1		1	1	1
20	Bignoniaceae	<i>Spathodea campanulata</i>	කුඩුල්ල ගස්	I	NE		1			
21	Calophyllaceae	<i>Mesua thwaitesii</i>	දිය නා	E	LC		1			
22	Cannabaceae	<i>Trema orientale</i>	ගැඹුඹ	N	LC	1	1		1	
23	Convolvulaceae	<i>Camonea pilosa</i>	කිරි මදු, මහ මදු	N	LC	1				

No	Family	Scientific Name	Common Name	DS	CS	D7 1	D7 2	D7 3	D7 4	D7 5
24	Costaceae	<i>Costus afer</i>		I	NE		1			
25	Costaceae	<i>Hellenia speciosa</i>	නෙඹු	N	LC	1		1		
26	Dilleniaceae	<i>Dillenia suffruticosa</i>	පර	I	NE	1	1		1	
27	Dilleniaceae	<i>Tetracera sarmentosa</i>	කොරොස වැල්	N	LC	1				1
28	Elaeocarpaceae	<i>Elaeocarpus serratus</i>	වෙරළ	N	LC	1				
29	Euphorbiaceae	<i>Macaranga peltata</i>	කැන්ද	N	LC	1		1	1	1
30	Euphorbiaceae	<i>Mallotus tetracoccus</i>	බු කැන්ද	N	LC	1			1	
31	Fabaceae	<i>Gliricidia sepium</i>	වැටමාර	I	NE			1		
32	Fabaceae	<i>Grona heterocarpa</i>	අන් උදුපියලිය	N	VU	1			1	1
33	Fabaceae	<i>Grona heterophylla</i>	මහ උදුපියලිය	N	LC				1	
34	Fabaceae	<i>Mucuna bracteata</i>	මුකුණ	I	NE			1		1
35	Fabaceae	<i>Neustanthus phaseoloides</i>	පෝර වැල්	I	NE			1		
36	Fabaceae	<i>Senegalia caesia</i>	හිඹුරු	N	LC		1			
37	Lamiaceae	<i>Hyptis capitata</i>		I	NE			1		1
38	Lamiaceae	<i>Mesosphaerum suaveolens</i>	අලි තල	I	NE				1	
39	Lamiaceae	<i>Vitex altissima</i>	මිල්ල	N	NT				1	
40	Lauraceae	<i>Cinnamomum verum</i>	කුරුදු, පත් කුරුදු	E	VU	1	1		1	
41	Lauraceae	<i>Litsea longifolia</i>	රත් කැලිය	E	DD	1				1
42	Malvaceae	<i>Hibiscus surattensis</i>	හීන් නාපිරින්න	N	LC	1				
43	Malvaceae	<i>Urena lobata</i>	පව්ව ඇපල	N	LC					1
44	Malvaceae	<i>Urena lobata subsp. sinuata</i>	හීන් ඇපල	N	LC	1				
45	Malvaceae	<i>Ceiba pentandra</i>	කොට්ට පුදුන්	I	NE	1				
46	Malvaceae	<i>Durio zibethinus</i>	දුරියන්	I	NE	1				
47	Melastomataceae	<i>Melastoma malabathricum</i>	මහ බෝවිටියා	N	LC				1	
48	Melastomataceae	<i>Memecylon rivulare</i>	පිනිබරු	E	VU		1			
49	Melastomataceae	<i>Miconia crenata</i>	කටකළ බෝවිටියා	I	NE	1		1	1	1
50	Melastomataceae	<i>Osbeckia octandra</i>	හීන් බෝවිටියා	E	LC				1	1
51	Meliaceae	<i>Swietenia macrophylla</i>	මැහෝගනී	I	NE		1			

No	Family	Scientific Name	Common Name	DS	CS	D7 1	D7 2	D7 3	D7 4	D7 5
52	Menispermaceae	<i>Anamirta cocculus</i>	නින්ත වැල්	N	LC					1
53	Monimiaceae	<i>Hortonia angustifolia</i>	නයිපත් වැවිය	E	VU		1			
54	Moraceae	<i>Artocarpus heterophyllus</i>	කොස්	I	NE	1		1		
55	Moraceae	<i>Artocarpus nobilis</i>	වල් දෙල්	E	LC	1				
56	Moraceae	<i>Ficus exasperata</i>	බු නෙදිය	N	LC			1		
57	Moraceae	<i>Ficus hispida</i>	කොට දිඹුල	N	LC		1			
58	Myrtaceae	<i>Syzygium caryophyllatum</i>	දං, හීන් දං	N	LC	1			1	1
59	Myrtaceae	<i>Syzygium nervosum</i>	බට දඹ	N	LC	1		1		
60	Oxalidaceae	<i>Oxalis barrelieri</i>		I	NE			1		1
61	Pandanaceae	<i>Freycinetia walkeri</i>	වියකෙයියා	E	NT	1				
62	Phyllanthaceae	<i>Breynia androgyna</i>	ජපන් බටු	N	LC	1		1		
63	Phyllanthaceae	<i>Bridelia moonii</i>	පන් කැල	E	LC	1		1		1
64	Phyllanthaceae	<i>Phyllanthus amarus</i>	පිටවක්කා	N	NE				1	1
65	Piperaceae	<i>Piper nigrum</i>	ගම්මිරිස්	I	NE	1				
66	Poaceae	<i>Cenchrus polystachios</i>		I	NE				1	1
67	Poaceae	<i>Ochlandra stridula</i>	බට	E	LC		1			
68	Poaceae	<i>Urochloa maxima</i>	ගිණි නණ	I	NE	1		1		1
69	Rhamnaceae	<i>Ziziphus rugosa</i>	මහ එරමිණියා	N	NT	1	1			
70	Rubiaceae	<i>Coffea arabica</i>	කෝපි	I	NE		1			
71	Rubiaceae	<i>Gaertnera vaginans</i>	ජේර නඹුල	E	LC					1
72	Rubiaceae	<i>Hedyotis fruticosa</i>	වැරණිය	N	LC	1				
73	Rubiaceae	<i>Mussaenda frondosa</i>	මුස්සන්ද	N	LC	1			1	1
74	Rubiaceae	<i>Spermacoce latifolia</i>		I	NE				1	
75	Sapindaceae	<i>Pometia pinnata</i>	බුලු මොර, නා ඉඹුල්, ගල් මොර	N	LC		1			
76	Smilacaceae	<i>Smilax perfoliata</i>	මහ කබරස	N	LC		1		1	
77	Smilacaceae	<i>Smilax zeylanica</i>	හීන් කබරස	N	NT					1
78	Symplocaceae	<i>Symplocos acuminata</i>	බෝඹු	N	LC	1		1	1	1

No	Family	Scientific Name	Common Name	DS	CS	D7 1	D7 2	D7 3	D7 4	D7 5
79	Verbenaceae	<i>Lantana camara</i>	ගඳපාන	I	NE				1	1
80	Verbenaceae	<i>Stachytarpheta jamaicensis</i>	බඳුනකුට	I	NE					1
81	Vitaceae	<i>Leea indica</i>	බුරුල්ල	N	LC	1				1

Annex 2b. The list of animal species recorded during the assessment.

Abbreviations used: **DS** - Distribution Status; **E** - Endemic, **N** - Native, **I** - Introduced. **CS** - Conservation Status (National Conservation Status or * Global Conservation Status); **CR** - Critically Endangered; **CR(PE)** - Critically Endangered Possible Extinct; **DD** - Data Deficient; **EN** - Endangered; **LC** - Least concern; **NE** - Not Evaluated, **NT** - Near Threatened; **VU** - Vulnerable. D71-D75; Sites visited (Table XX).

No.	Family	Scientific Name	Common Name	DS	CS	D71	D72	D73	D74	D75
Dragonflies										
1	Calopterygidae	<i>Neurobasis chinensis</i>	Oriental green-wing	N	VU		1			
2	Calopterygidae	<i>Vestails nigrescens</i>	Black-tipped flashwing	N	LC*		1			
3	Euphaeidae	<i>Euphaea splendens</i>	Shining Gossamerwing	E	LC*		1			
4	Platycnemididae	<i>Elattoneura oculata</i>	Two-spotted threadtail	E	VU*		1			
5	Platycnemididae	<i>Elattoneura centralis</i>	Dark-glittering Threadtail	E	LC*	1				
6	Platystictidae	<i>Ceylonosticta brincki</i>	Brinck's Shadowdamsel	E	LC*	1	1			
7	Platystictidae	<i>Ceylonosticta bine</i>	Bine's Shadowdamsel	E	VU*	1				
8	Macromiidae	<i>Macromia flinti</i>	Flint's Emerald	E	CR*		1			
9	Libellulidae	<i>Orthetrum chrysis</i>	Spine-tufted Skimmer	N	VU		1			
10	Libellulidae	<i>Orthetrum glaucum</i>	Asian Skimmer	N	NT		1			
11	Libellulidae	<i>Trithemis festiva</i>	Indigo Dropwing	N	VU		1			
12	Libellulidae	<i>Zygonyx iris</i>	Sri Lanka Cascader	N	LC*	1				
Butterflies										
1	Papilionidae	<i>Papilio helenus</i>	Red Helen	N	VU		1			
2	Papilionidae	<i>Papilio polymnestor</i>	Blue Mormon	N	LC		1		1	

No.	Family	Scientific Name	Common Name	DS	CS	D71	D72	D73	D74	D75
3	Papilionidae	<i>Graphium teredon</i>	Narrow-banded Bluebottle	N	LC			1		
4	Pieridae	<i>Leptosia nina</i>	Psyche	N	LC	1		1	1	
5	Pieridae	<i>Appias galene</i>	Sri Lankan Lesser Albatross	E	LC	1			1	
6	Pieridae	<i>Catopsilia pomona</i>	Lemon Emigrant	N	LC			1	1	
7	Pieridae	<i>Eurema hecabe</i>	Common Grass Yellow	N	LC	1	1	1		
8	Pieridae	<i>Eurema ormistoni</i>	Sri Lankan One-Spot Grass Yellow	E	VU	1				
9	Nymphalidae	<i>Euploea core</i>	Common Crow	N	LC				1	
10	Nymphalidae	<i>Acraea terpsicore</i>	Tawny Coster	N	LC				1	
11	Nymphalidae	<i>Junonia atlites</i>	Grey Pansy	N	LC				1	
12	Nymphalidae	<i>Junonia iphita</i>	Chocolate Soldier	N	LC			1	1	1
13	Nymphalidae	<i>Pantoporia hordonia</i>	Common Lascar	N	NT			1		
14	Nymphalidae	<i>Neptis hylas</i>	Common Sailor	N	LC	1			1	
15	Nymphalidae	<i>Neptis jumbah</i>	Chestnut Streaked Sailor	N	LC	1				
16	Nymphalidae	<i>Parthenos sylvia</i>	Clipper	N	LC			1	1	
17	Nymphalidae	<i>Melanitis leda</i>	Common Evening Brown	N	LC		1			
18	Nymphalidae	<i>Orsotriaena medus</i>	Medus Brown	N	LC				1	
19	Nymphalidae	<i>Mycalesis mineus</i>	Dark-Brand Bushbrown	N	LC				1	
20	Nymphalidae	<i>Mycalesis patnia</i>	Sri Lanka Gladeye Bushbrown	E	LC	1				
21	Nymphalidae	<i>Ypthima ceylonica</i>	White Four-ring	N	LC			1	1	1
22	Nymphalidae	<i>Elymnias hypermnestra</i>	Common Palmfly	N	LC	1				
23	Lycaenidae	<i>Jamides coruscans</i>	Sri Lankan Cerulean	E	VU	1				
24	Lycaenidae	<i>Discolampa ethion</i>	Banded Blue Pierrot	N	LC	1				
25	Lycaenidae	<i>Caleta decidia</i>	Angled Pierrot	N	LC	1		1		
26	Hesperiidae	<i>Tagiades japetus</i>	Common Snow Flat	N	LC				1	
27	Hesperiidae	<i>Iambrix salsala</i>	Chestnut Bob	N	LC			1	1	1
28	Hesperiidae	<i>Oriens goloides</i>	Common Dartlet	N	NT	1				1
29	Hesperiidae	<i>Pelopidas agna</i>	Little Branded Swift	N	NT				1	
Freshwater Fish										
1	Cyprinidae	<i>Dawkinsia filamentosa</i>	Sri Lanka Filamented Barb	N	LC		1			

No.	Family	Scientific Name	Common Name	DS	CS	D71	D72	D73	D74	D75
2	Cyprinidae	<i>Garra ceylonensis</i>	Sri Lanka Stone Sucker	E	NT		1			
3	Cyprinidae	<i>Puntius bimaculatus</i>	Redside Barb	N	LC		1			
4	Cyprinidae	<i>Puntius dorsalis</i>	Long-Snouted Barb	N	LC		1			
5	Cyprinidae	<i>Puntius titteya</i>	Sri Lanka Cherry Barb	E	VU		1			
6	Cyprinidae	<i>Systemus pleurotaenia</i>	Sri Lanka Black-Lined Barb	E	VU		1			
7	Cyprinidae	<i>Tor khudree</i>	Masheer	N	NT		1			
8	Danionidae	<i>Devario malabaricus</i>	Giant Danio	N	LC		1			
9	Danionidae	<i>Rasbora dandia</i>	Broad line Striped Rasbora	N	LC		1			
Amphibians										
1	Nictibatrachidae	<i>Lankanectes corrugatus</i>	Corrugated water frog	E	NT*	1				
2	Rhacophoridae	<i>Pseudophilautus popularis</i>	Common shrub frog	E	VU*					1
3	Rhacophoridae	<i>Polypedates cruciger</i>	Common hourglass tree frog	E	LC*					1
Reptiles										
1	Agamidae	<i>Calotes calotes</i>	Green forest Lizard	N	LC				1	1
2	Agamidae	<i>Calotes versicolor</i>	Garden Lizard	N	LC			1	1	
3	Agamidae	<i>Otocryptis wiegmanni</i>	Sri Lankan Kangaroo Lizard	E	LC*	1	1			
4	Colubridae	<i>Ahaetulla nasuta</i>	Green Vine Snake	E	LC				1	
5	Colubridae	<i>Dendrelaphis caudolineolatus</i>	Striped-tailed Bronze-back	N	VU*	1				
Birds										
1	Accipitridae	<i>Ictinaetus malayensis</i>	Black Eagle	N	NT			1	1	
2	Accipitridae	<i>Spizaetus cirrhatus</i>	Changeable Hawk-eagle	N	LC			1		
3	Accipitridae	<i>Spilornis cheela</i>	Crested Serpent-eagle	N	LC			1		
4	Accipitridae	<i>Pernis ptilorhyncus</i>	Oriental Honey-buzzard	N	NT			1		
5	Accipitridae	<i>Hieraaetus kienerii</i>	Rufous-bellied Eagle	N	NT		1			
6	Columbidae	<i>Chalcophaps indica</i>	Emerald Dove	N	LC					1
7	Psittacidae	<i>Psittacula calthropae</i>	Sri Lanka Emerald-collared Parakeet	E	NT	1				
8	Psittacidae	<i>Loriculus beryllinus</i>	Sri Lanka Hanging Parrot	E	LC	1	1	1	1	1
9	Apodidae	<i>Cypsiurus balasiensis</i>	Asian Palm-swift	N	LC				1	
10	Apodidae	<i>Apus affinis</i>	Little Swift	N	LC			1	1	

No.	Family	Scientific Name	Common Name	DS	CS	D71	D72	D73	D74	D75
11	Hemiprocnidae	<i>Hemiprocne coronata</i>	Crested Treeswift	N	LC				1	
12	Alcedinidae	<i>Halcyon smyrnensis</i>	White-throated Kingfisher	N	LC		1			
13	Alcedinidae	<i>Pelargopsis capensis</i>	Stork-billed Kingfisher	N	LC		1			
14	Meropidae	<i>Merops leschenaulti</i>	Chestnut-headed Bee-eater	N	LC			1		
15	Ramphastidae	<i>Megalaima zeylanica</i>	Brown-headed Barbet	N	LC	1				
16	Ramphastidae	<i>Megalaima rubricapillus</i>	Sri Lanka Barbet	E	LC					1
17	Ramphastidae	<i>Megalaima flavifrons</i>	Sri Lanka Yellow-fronted Barbet	E	LC	1	1	1	1	1
18	Picidae	<i>Dendrocopos nanus</i>	Brown-capped Woodpecker	N	LC				1	
19	Aegithinidae	<i>Aegithina tiphia</i>	Common Iora	N	LC		1			
20	Campephagidae	<i>Pericrocotus flammeus</i>	Scarlet Minivet	N	LC		1			
21	Hirundinidae	<i>Hirundo hyperythra</i>	Sri Lanka swallow	E	LC			1		
22	Pycnonotidae	<i>Hypsipetes leucocephalus</i>	Asian Black Bulbul	N	LC	1	1		1	1
23	Pycnonotidae	<i>Pycnonotus melanicterus</i>	Black-crested Bulbul	E	LC		1			
24	Pycnonotidae	<i>Pycnonotus cafer</i>	Red-vented Bulbul	N	LC		1	1	1	
25	Pycnonotidae	<i>Pycnonotus luteolus</i>	White-browed Bulbul	N	LC		1			
26	Pycnonotidae	<i>Iole indica</i>	Yellow-browed Bulbul	N	LC		1			
27	Sylviidae	<i>Orthotomus sutorius</i>	Common Tailorbird	N	LC	1				1
28	Zosteropidae	<i>Zosterops palpebrosus</i>	Oriental White Eye	N	LC	1	1		1	
29	Sturnidae	<i>Gracula religiosa</i>	Hill Myna	N	LC	1	1		1	1
30	Muscicapidae	<i>Cyornis tickelliae</i>	Tickell's Blue Flycatcher	N	LC		1			
31	Dicaeidae	<i>Dicaeum erythrorhynchos</i>	Pale-billed Flowerpecker	N	LC	1	1		1	1
32	Nectariniidae	<i>Nectarinia zeylonica</i>	Purple-rumped Sunbird	N	LC		1	1		
Mammals										
1	Cercopithecidae	<i>Macaca sinica</i>	Sri Lanka toque monkey	E	LC		1			
2	Suidae	<i>Sus scrofa</i>	Wild boar	N	LC					1
3	Hystricidae	<i>Hystrix indica</i>	Porcupine	N	LC	1		1	1	
4	Sciuridae	<i>Ratufa macroura</i>	Giant squirrel	N	LC	1				