

POTENTIAL FOR WILD ELEPHANT-BASED ECOTOURISM PRACTICES IN AND AROUND MADURU OYA NATIONAL PARK

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Abstract

The Maduru Oya National Park is located in the eastern wildlife region, and spreads across 26 Grama Niladhari Divisions in five Divisional Secretariat Divisions of the Ampara, Polonnaruwa and Badulla districts of Sri Lanka. The park holds five reservoirs, dominated by grasslands and secondary shrub forest patches - the most preferred habitats of wild elephants. It is estimated that 1,573 wild elephants live in this area, thus increasing the chances for encounters, inevitably leading to high rates of Human-Elephant Conflict (HEC) incidents. Considerably high habitat and ecosystem diversity matched with high endemicity, has led the Department of Wildlife Conservation (DWC) to take action in declaring the area as a national park, under the Fauna and Flora Protection Ordinance (FFPO). The park is currently open to both local and foreign visitors. The purpose of this study is to estimate the potential for wild elephant-based ecotourism practices in and around the Maduru Oya National Park. Visitor data for the last five years were obtained from the DWC. Elephant movement patterns in and around the Maduru Oya National Park in the last two years, were observed and recorded. Village surveys were carried out to determine occupancy of villagers, cultivated crops and livelihood patterns. During the last five years (2017 -2021), a total of 13,504 visitor arrivals were recorded, constituting 11,866 local and 1,638 foreign visitors. The Maduru Oya National Park had a visitation rate of only 0.16%, a very low percentage compared to the Wasgamuwa National Park - a protected area adjacent to the Maduru Oya National Park with a visitation rate of 1.35%, and other high-demand national parks such as Yala and Udawalawe National Parks with visitation rates of 24.60% and 14.96% respectively. Very few visitor arrivals are recorded in total, at the Maduru Oya National Park. A majority of the adjoining community are farmers, and the main crops cultivated are paddy, maize, cow pea, pumpkin and chilly. Chena cultivation is a common method observed in the area as it is in the dry zone of Sri Lanka. Two main cultivation seasons occur in the area - the Maha season from October to February, and the Yala season from May to August. During these periods, farmers look after their crops and chase away elephants. Moreover, during these periods there is plenty of food and water available in the park and therefore, most elephants remain inside. Four natural elephant corridors linking the Maduru Oya National Park with the Wasgamuwa, Gal Oya, Somawathiya and Flood Plains National Parks have been identified. As the elephants from the Maduru Oya National Park move along their natural paths, the HEC is high in the area. Frequent encounters are observed in paddy fields and crop plantations post-harvest, and in the home gardens of villagers. People cannot engage in cultivation due to elephant attacks and lack of irrigable water between the Yala and Maha seasons. The community also does not have the ability to

engage in any other income-generating activity. The study revealed that the opportunity for promoting visitor safari activities with a focus on elephant sightings is highest during evenings after harvesting has ended. People have tree huts in their crop fields, which are used to stay in overnight to protect their crops from wild animals. These tree huts are well maintained and therefore, can be used for tourism purposes. Homestay facilities can be improved in selected homes around the Maduru Oya National Park. At present, some small scale ecotourism practices are being implemented in the Dambana and Gurukumbura areas. It is therefore concluded that the expansion of wild elephant-based ecotourism is one solution to managing the HEC.

Keywords: Maduru Oya, Wild Elephants, Human-Elephant conflict, ecotourism

1.0 Introduction

Three subspecies of the Asian elephant (*Elephas maximus*) are currently recognized: *E. maximus* in Sri Lanka, *E. maximus indicus* on the Indian mainland, and *E. maximus sumatranus* in Sumatra (Shoshani & Eisenberg, 1982). Since recent times, there has been an increasing concern for the welfare and long-term survival of Asian elephants in this part of the world, as the Asian elephant has been listed as an “Endangered species” (IUCN 1999). Among the main factors that have contributed to this status in Sri Lanka is its disappearance from its former range; limited to small, fragmented and isolated populations in different protected areas.

Even though more than 13% of the land area is set aside as Protected Areas (PA) under the jurisdiction of the Department of Wildlife Conservation (DWC) (Legg and Jewel 1992), more than 50% of the elephant population in Sri Lanka is encountered outside these PAs (DWC Draft Elephant Conservation Action Plan 2015). At present, there are no integrated elephant management programmes being carried out in Sri Lanka (Duminduhewa et al., 2020), other than restoring water holes in protected areas, and the erection of electric fences as deterrents. Polonnaruwa, Trincomalee and the eastern wildlife regions of Sri Lanka have been identified as being confronted with high Human-Elephant Conflict (HEC) incidents due to the prevailing development activities and expanding populations. Although permanent solutions cannot be found, a trade-off could be drawn after systematic studies (Padmalal 2001).

The Sri Lankan elephant (*Elephas maximus maximus*) is one of the flagship species of the wilds of Sri Lanka. Based on the last survey done by the DWC in Sri Lanka, about 6,000 wild elephants live in Sri Lanka (DWC 2011). They are mainly in the dry and intermediate zones of the island. Maduru Oya National Park is in the dry zone of Sri Lanka. The Maduru Oya National Park is located in the eastern wildlife region, and spreads across 26 Grama Niladhari Divisions (GND) in five Divisional Secretariat Divisions (DSD) of the Ampara, Polonnaruwa and Badulla districts of Sri Lanka. The park holds five reservoirs, dominated by grasslands and secondary shrub forest patches - the most preferred habitats of wild elephants. It is estimated that 1,573 wild elephants live in this area, thus increasing the chances for encounters, inevitably leading to high rates of HEC incidents.

Considerably high habitat and ecosystem diversity matched with high endemism, has led the Department of Wildlife Conservation (DWC) to take action in declaring the area as a national park, under the Fauna and Flora Protection Ordinance (FFPO). At present, 18 national parks and a sanctuary are open for visitors, and one of them is the Maduru Oya National Park. The park is currently open to both local and foreign visitors. There are three entrances functioning; the Maduru Oya main entrance, the Hennanigala entrance and the Galkada entrance. It is easy to access the Maduru Oya main entrance from the city of Polonnaruwa. The Galkada entrance is only 5km from the Mahiyanganaya town. The

Hennanigala entrance is in close proximity to Dehiattakandiya, and whoever who visits the Dambana indigenous people’s cultural center, can easily access the Hennanigala entrance.

Almost all the families in the 26 GNDs engage in agriculture-related livelihoods. Chena cultivation, paddy cultivation, Banana plantations, and large maize farms are common in villages around the Maduru Oya National Park. The purpose of this study is to estimate the potential for wild elephant-based ecotourism practices in and around the Maduru Oya National Park. The study also hopes to manage the elephant populations in this human-dominated landscape, designing effective mitigation measures for the HEC. This is likely to contribute towards the conservation of wild Asian elephants in Sri Lanka, and the improvement of livelihoods of the local people who bear the most costs of the conflict.

2.0 Methodology

Visitor data for the last five years were obtained from the DWC. Elephant movement patterns in and around the Maduru Oya National Park in the last two years, were observed and recorded. They included direct observations of elephants and indirect elephant counts such as elephant dung counts, crop damage records, elephant footprints and sighting records of wildlife officers and villagers. Village surveys were carried out using a descriptive questionnaire to determine occupancy of villagers, cultivated crops and livelihood patterns.

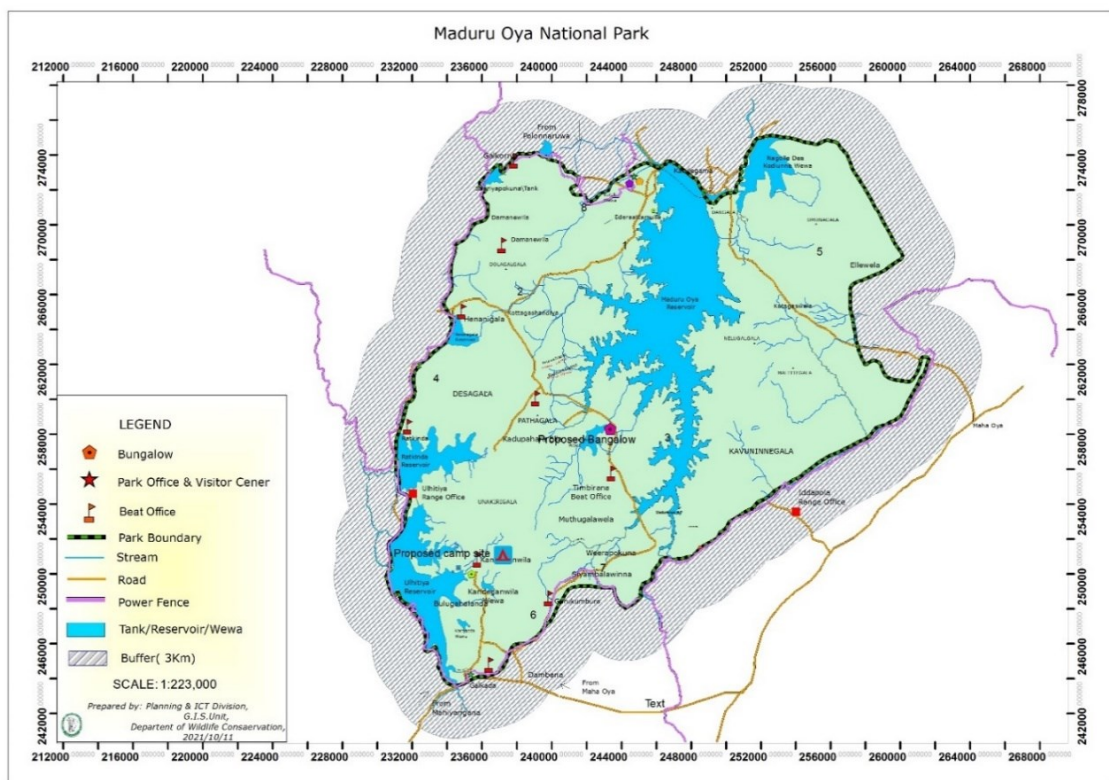


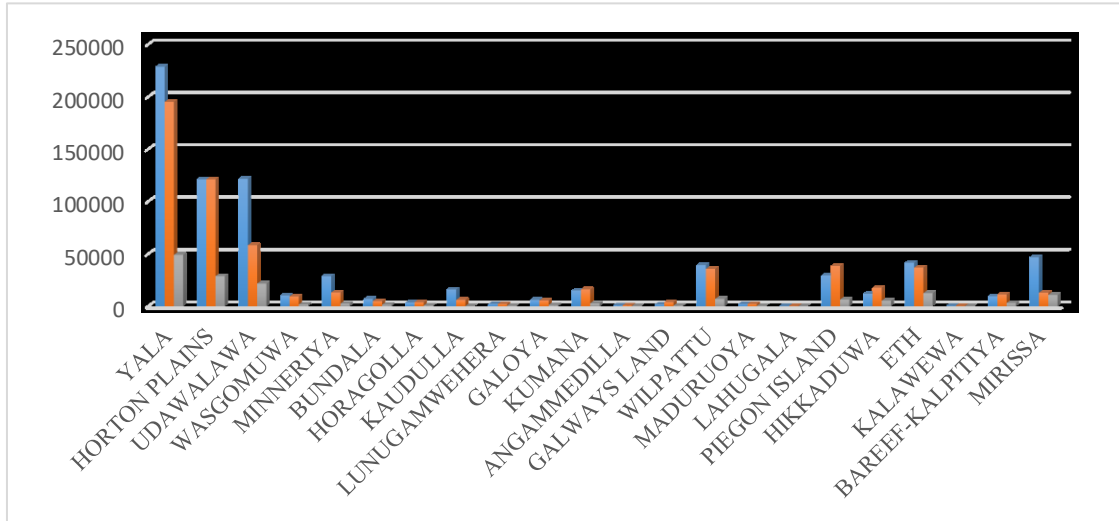
Figure 2.1: MaduruOya National Park (Study area)
Source : Prerared by Author

3.0 Findings

During the last five years (2017 -2021), a total of 13,504 visitor arrivals were recorded, constituting 11,866 local and 1,638 foreign visitors. The Maduru Oya National Park had a

visitation rate of only 0.16%, a very low percentage compared to the Wasgamuwa National Park - a protected area adjacent to the Maduru Oya National Park with a visitation rate of 1.35%, and other high-demand national parks such as Yala and Udawalawe National Parks with visitation rates of 24.60% and 14.96% respectively. Very few visitor arrivals are recorded in total, at the Maduru Oya National Park.

Chart 3.1: Visitor Arrivals of National Parks in 2020, 2021 & 2022



Source : Department of Wuld Life Conservation

Chart 3.2: Illustrates visitor data of the Maduru Oya National Park for 2021

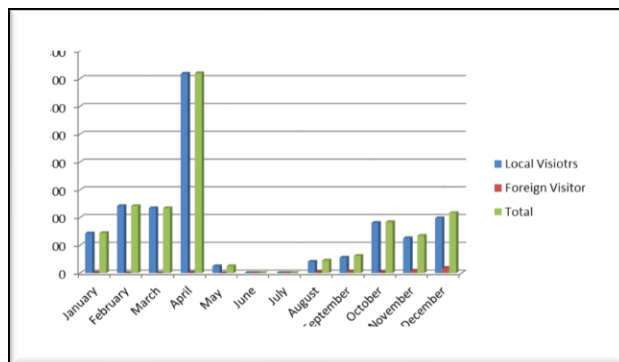
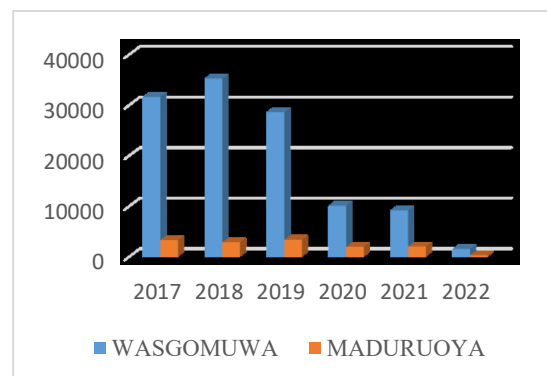
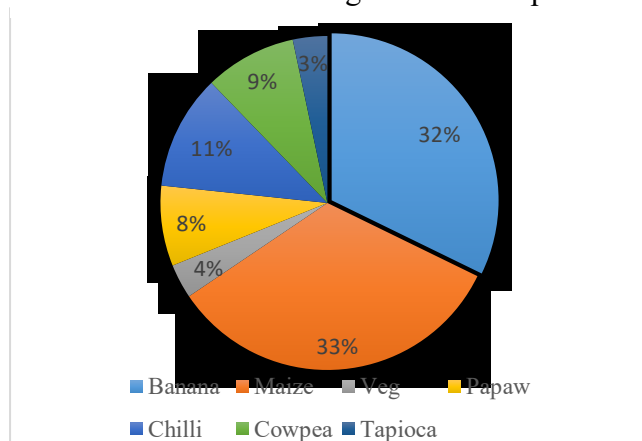


Chart 3.3: Shows visitor arrivals of the Maduru Oya and Wasgamuwa National Parks from 2017 to October 2022.



Compared to the Wasgamuwa National Park which is a major park the visitor arrivals to Maduru Oya National Park is very low. Some of the reasons are that the Maduru Oya National Park is far away from Colombo, it is not included in most tour operators' routes, lack of visitor facilities such as safari tours, restaurants, etc. at the Maduru Oya National Park, and no proper accommodation facilities other than the two bungalows and dormitory being

Chart 3.4 : Percentage of main crops



managed by the DWC. Most of the adjoining community are farmers and the main crops cultivated are paddy and chena crops, in different times of the year. Chena crops mainly include maize, cow pea, pumpkin and chilly.

Chart 3.5 : Percentage of prominent crop cultivation methods

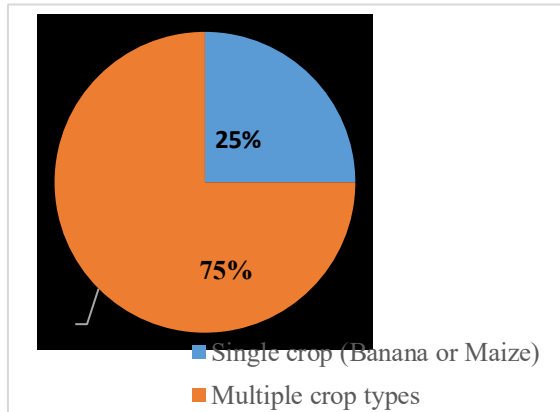
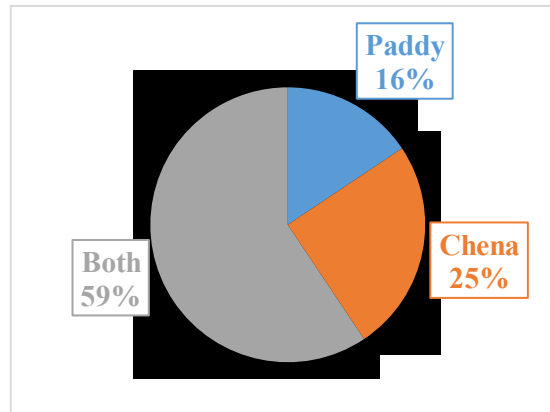


Chart 3.6 : Crop preference of farmers around the Maduru Oya National Park

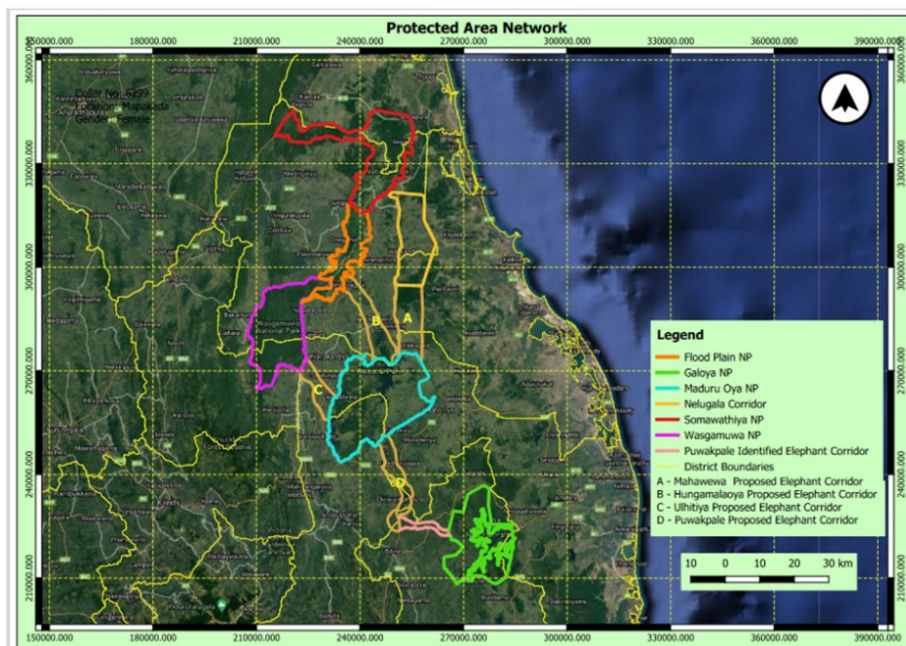


Source : Department of Wuld Life Conservation

The total respondents, 25% were engaged in only single crop cultivation of either banana or maize. The rest engaged in as well as home gardens. The crop preference of the farmers around the Maduru Oya National Park is shown in the chart 3.4. Chena cultivation is a common method observed in the area as it is in the dry zone of Sri Lanka. Two main cultivation seasons occur in the area - the Maha season from October to February, and the Yala season from May to August. During these periods, farmers look after their crops and chase away elephants. Moreover, during these periods there is plenty of food and water available in the park and therefore, most elephants remain inside.

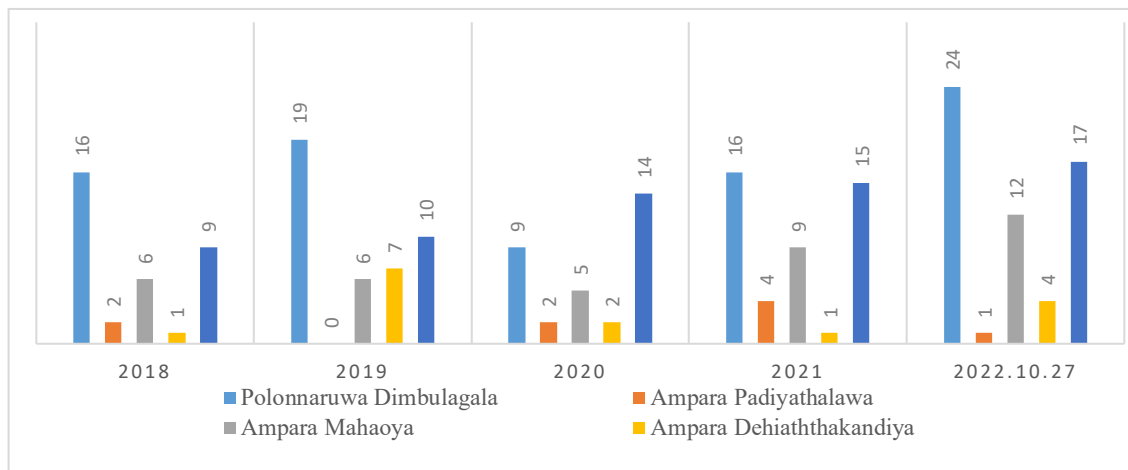
Four natural elephant corridors linking the Maduru Oya National Park with the Wasgamuwa, Gal Oya, Somawathiya and Flood Plains National Parks have been identified. The below map (Figure 3.1) shows the natural elephant corridor links with the Maduru Oya National Park.

Figure 3.1 The natural wild elephant corridors around the Maduru Oya National Park



As the elephants from the Maduru Oya river based on National Park move along their natural paths, the HEC is high in the area. Frequent encounters are observed in paddy fields and crop plantations post-harvest, and in the home gardens of villagers. The HEC in the eastern wildlife region in which the Maduru Oya National Park is located, is high. The graph below shows the elephant deaths in five DSDs around the Maduru Oya National Park in the last five years, due to the HEC. People cannot engage in cultivation due to elephant attacks and lack of irrigable water between the Yala and Maha seasons. The community also does not have the ability to engage in any other income-generating activity.

Chart 3.7: Elephant Death 2018-2022 October



4.0 Discussion

The natural elephant corridors are used by wild elephants to move towards nearby forests in search of food and mates. These elephant pathways connect the Maduru Oya National Park with Wasgamuwa, Gal Oya, Somawathiya and the Flood Plains National Parks. Moreover, the elephants in and around Maduruoya national park are common throughout the year.

The study revealed that the opportunity for promoting visitor safari activities with a focus on elephant sightings is highest during evenings after harvesting has ended. People have tree huts in their crop fields, which are used to stay in overnight to protect their crops from wild animals. These tree huts are well maintained and therefore, can be used for tourism purposes. Homestay facilities can be improved in selected homes around the Maduru Oya National Park. At present, some small-scale ecotourism practices are being implemented in the Dambana and Gurukumbura areas. It is therefore concluded that the expansion of wild elephant-based ecotourism is one solution to managing the HEC. It is also an alternative income-generating path and as such, can uplift the economic level of the surrounding community.

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