

Determining leopard presence, land use, and prey species availability in Ruhuna (Yala) National Park Border Areas



Interim Update Report II – June 2020

Submitted By



The Leopard Project
The Wilderness & Wildlife Conservation Trust

Sri Lanka

Email: info@wwct.org Website: www.wwct.org

Determining leopard presence, land use, and prey species availability in Ruhuna (Yala) National Park Border Areas

Summary Background

The first phase of this study (July-August 2018 & May-June 2019) set up remote cameras in the border areas outside and adjacent to the electric fence of Ruhuna (Yala) National Park (YNP), Block I, Palatupana in proximity to cattle areas. Phase II for which we report here (Dec 2020-June 2020) focused more on the Nimalawa Sanctuary and forested areas within the electric fenced buffer. This Phase was unfortunately affected by the Covid-19 lockdown period as we had no access for the three months and as such data collection was limited during this time.

Primarily this project aims to understand leopard presence and land use together with prey availability in these buffer zone areas of YNP and how this may influence the overall leopard population here. Secondly we attempt to assess the impact on leopards by the livestock farming that is ongoing in this buffer area.

During this Phase, 13 leopards were documented utilising this buffer area of YNP. One female has been identified as an animal that was earlier in Block I. Whether these leopards are using both Block 1 and this buffer area simultaneously or not, needs to be further ascertained.

As a side study the efficacy of giving pens to herders (a project carried out by a corporate sector) was also conducted. Whether these pens were aiding or hindering overall long-term conservation of leopards in the area was assessed. A key result of this was that the highest reason for loss of cattle was theft and disease. Loss due to leopard predation which is often put forth as a main issue for cattle herders, factored in as the 4th most common cause of cattle loss.

The dairy industry in Sri Lanka is being intensified and non-traditional methods of cattle farming are being promoted. This runs the risk of bringing cattle and wildlife into closer contact. The possible competition for space and resources could lead to increased wildlife-human conflict scenarios and disease outbreaks. Overgrazing by these cattle herds within buffer zones also means possible reduced fodder for herbivores that are the leopard's prey base here. This scenario needs to be monitored at this point, to understand how the increase of the dairy industry will in turn impact wildlife populations and play a role in the increase of human-wildlife interaction and possible conflict scenarios.

Field Work – Phase II

Leopard Monitoring

Remote Camera set up:

The area on either side of the entry road from Nimalawa to the Yala National Park entrance at Palatupana, bordered by the Park electric fence on the north and the ocean on the southeast, together with Nimalawa Sanctuary, made up the current study area.

Camera trapping for Phase II (January to July 2020) included 9 stations (Figure 1). Unfortunately, due to the Covid-19 lockdown and subsequent inaccessibility of the study area, we were unable to cover a larger area, as initially planned. We hope to do so in the next phase once permitted.



Map 1: Remote camera station locations for Phase II (Dec 2019-June 2020), YNP Palatupana entrance border area.

Leopards Documented in Phase II

During this reporting period we documented 13 leopards (7 female, 3 males, 3 unknown) using this area of the buffer (Table 1). One of these females was earlier identified in Block 1 and is now using the Nimalawa Sanctuary. Continued monitoring both in the buffer and at a later date inside the National Park will also benefit in understanding the land use patterns and issues faced by leopards in this overall area. Some of the identified leopards are shown below in Figure 1-5.

Table 1: Identified leopards during Phase II (Dec 2019-June 2020) within the study area of the Yala Palatuapana buffer zone and Nimalawa Sanctuary edge.

Leopard	Age/Sex	Occasions Monitored	Comments
BoBF1	Adult/Female	15	Resident (Frequently monitored)
BoBM1	Adult/Male	4	Possible Resident
CinRockF1	Adult/Female	4	Possible Resident
CinRockF2	Adult/Female	1	
Headwound	Adult/Male	2	Possible Resident
NimRockF1	Adult/Female	3	
NimRockM1	Adult/Male	1	
ThF1	Adult/Female	7	Resident (Frequently monitored)
ThF2	Adult/Female	1	
ThyF	Young/Female	1	
Unknown		1	Three unidentified animals



Figure 1: BoBF1 Adult Female in the Nimalawa Sanctuary area.



Figure 2: Young Female photo monitored behind the Nimalawa Sanctuary Beat.



Figure 3: Adult Male BoBM1 relaxing within the southeast edge of Nimalawa



Figure 4: Adult Male Headwound walking across a rock outcrop in Nimalawa Sanctuary.



Figure 5: Adult Female CinRockF2 walking across a large rock outcrop within the electric fence buffer area

Cattle herders and cattle pen assessment

Assessment of interview surveys with cattle farmers indicate that perceptions rather than actual loss of cattle from leopards is what causes negative views towards leopards. The primary cause of cattle loss was theft and disease (Table 2).

Table 2. Causes of livestock loss and the average percentage of livestock loss attributed to each cause, across the 61 survey respondents in Yala, Sri Lanka. Surveys were conducted from May-August 2018.

Cause of livestock loss	Average percentage of livestock loss attributed to cause	Standard deviation
Snake bite	1.1	0.035
Elephant	2.0	0.070
Crocodile	3.7	0.073
Dog	6.7	0.115
Leopard	11.1	0.153
Wandering off	13.8	1.156
Disease	21.1	0.167
Theft	29.8	0.298

Prey Base

In Phase I reporting we noted that although wild prey was present on the landscape, domestic cattle were widely documented within the area. Phase I focused more on the cattle herding areas of this buffer zone, whereas in Phase II more forested areas were monitored including within Nimalawa Sanctuary. Here too cattle were documented though to a lesser extent, with wild prey having a higher frequency of detection. However, the continued presence of domestic cattle may result in direct food competition between domestic species and wild ungulates. As well, disease transmission between domestic species, wild ungulates and leopards is another possibility that needs consideration.

An important aspect that requires dedicated monitoring is to investigate whether the high prevalence of cattle is impacting the natural grazing vegetation available to wild prey. The establishment of protective vegetation plot enclosures that will prevent cattle from grazing within will enable monitoring of vegetative growth and composition and how this is being impacted by domestic cattle grazing. Similar on-going work has been revealing in the Serengeti National Park landscape in Tanzania.

Threats

Our remote cameras have detected evidence of both snares and possibly explosive devices (“haka patas”) in the Nimalawa Sanctuary (Figure 6). Continued monitoring by remote cameras can shed additional light as to the extent of these threats both within and outside protected areas in the region. This monitoring will also help to select locations for increased patrolling in order to prevent such activities from occurring.



Figure 6: Young jackal with wire snare around its neck (left) and wild boar with apparent facial injuries, possibly from an explosive device (right).

Next Steps

Leopard scat analysis and the establishment of vegetation plot enclosures, as suggested above, to monitor grazing effects by cattle would go a long way to understand the changing dynamics occurring in the YNP buffer zone. This is increasingly relevant due the increased number of cattle being grazed in this buffer zone area.

A better assessment of wild prey available vs consumed, and the percentage of domestic prey consumed by leopards is important as this can clarify whether leopards preying on cattle in the Yala buffer is a significant issue. Interview surveys suggest that leopard predation is not the primary issue for cattle herders in the region but the negative perception of the farmer towards leopards causes the relatively low level of conflict that exists to be magnified. It is important to note, however that perception is often more important than reality in these kinds of scenarios and the threat to the leopard population from retaliatory killings is not insignificant.

Continued remote camera monitoring in this buffer area will enable a more robust idea of the leopard population using this compromised landscape. While it is assumed that

some leopards utilize the boundary areas of Yala, with ranges that include both protected and unprotected landscapes, the extent of this could be ascertained with monitoring in both locations, inside and outside Block 1 within all buffer areas.

Acknowledgments

With ongoing and sincere thanks to the Department of Wildlife Conservation for continued issuance and inclusion of this study site within our permits to carry out this work. Thank you to Mr. Seyasingha, Yala park warden and his field staff for collaborating with WWCT and sending along the necessary DWC staff to accompany our team members in the field.

With thanks to WildCoast Lodge, Resplendent Ceylon for partnering support, logistics and field assistance. As always thank you to our ever-dynamic field team.