Darwin Initiative/Darwin Plus Projects
Half Year Report
(due 31st October 2020)

Project reference	26-016
Project title	Lion Carbon: creating biodiversity value and sustainable management through REDD+
Country(ies)/territory(ies)	Zambia
Lead organisation	University of Oxford
Partner(s)	BioCarbon Partners, Lion Landscapes
Project leader	Prof David Macdonald
Report date and number (e.g. HYR3)	20th Oct 2020 HYR2
Project website/blog/social media	There is not yet any specific project social media but all three project partners have websites and related social media: www.lionlandscapes.org, www.biocarbonpartners.com, www.wildcru.org

1. Outline progress over the last 6 months (April – Sept) against the agreed project implementation timetable (if your project has started less than 6 months ago, please report on the period since start up to end September).

Output 1

Activity 1.1. Hold quarterly CRB led conservation planning review meetings for each GMA (3) in the phase one project area. During which, performance of the CRB and BCP are reviewed against CRB Conservation Work Plans and Community Forest Management Agreements.

CRBs (Community Forest Management Groups - CFMGs) have completed Annual Work Plans upon which conservation fees have been disbursed to them to implement. A major highlight from the work plans was the fire management strategy as well as the patrols to deal with encroachment in the project zone. Quarterly meetings with the CFMGs are on-going and the Forest Department (FD) has been engaged to ensure that CFMGs adhere to the reporting requirements in the Community Forest Management Agreements. Through the reports, a combined team of BCP, Department of National Parks (DNPW) and FD will conduct capacity needs assessments to identify potential training needs for the CFMGs for capacity enhancement.

Output 2

Activity 2.2. Purchase all biodiversity monitoring equipment required as outlined in the biodiversity monitoring methods and protocols in 2.1.

All necessary biodiversity monitoring equipment has been purchased and deployed in order to carry out biodiversity monitoring surveys outlined in the Biodiversity Monitoring Plan. This includes equipment needed for walked distance sampling surveys and camera trapping arrays.

Activity 2.3. Carry out initial biodiversity monitoring training for 100 scouts and 3 managers in year 1, and initial training for 30 new scouts and refresher training for 100 existing scouts during year 2. Biodiversity monitoring will form part of the in-service training all scouts will receive annually (see 3.2.).

The biodiversity monitoring methods take a layered approach, using both 1. structured distance sampling and occupancy modelling surveys, and 2. the daily recording of wildlife and illegal activity data by scouts on their patrols using SMART.

1. Structured surveys - In our original proposal, all scouts were going to be trained to collect biodiversity monitoring data and run formal surveys, as part of their basic training. In our end YR1 report we described that, due to the importance of consistency and accuracy needed during the formal surveys, and problems with skill-fade when it comes to the protocols needed to be followed, we switched to have smaller specialist teams of scouts collecting distance sampling and occupancy modelling data. We also described that training for these surveys would be provided immediately before every formal survey. Since our last (YR1) report, one more set of formal distance sampling and occupancy modelling surveys – the early dry season surveys – have been run. These surveys were run on schedule and four days of intense training given immediately prior to the surveys to the selected biodiversity monitoring teams - a total of 28 scouts and Forest Monitors. Training consisted of a background of why biodiversity monitoring is being carried out, methods used, proper use and maintenance of the equipment needed, and 2 days of running practice transects to make sure everyone involved was familiar and confident with the survey protocols. Extra training was given to the managers on how to manage the surveys and how to troubleshoot common problems that arise.

2. Patrol data collection using SMART: The one exception to this will be the SMART data collection (Activity 3.5), which is carried out by all active scouts.

Activity 2.4. Complete 2 years of biodiversity monitoring data collection in the phase 1 project area. Exact methods and protocols to be determined in 2.1. but will include distance sampling and occupancy modelling using camera traps.

Distance sampling and occupancy modelling surveys have been run once in the last 6 months of this project, as planned. The two survey areas were covered, Rufunsa (390 km2 and Munyamadzi (180 km2). These areas represent the two main habitat types in the wider area;

valley floor made up of riverine and predominantly Mopane woodland, and *escarpment* areas covered predominantly with miombo woodland. An additional biodiversity monitoring activity during this reporting period was the deployment of the camera trap arrays. These camera trap arrays are still deployed at the time of writing this report and will be providing data occupancy modelling data for the rarer, nocturnal and more elusive species that are hard to capture during distance sampling. Structured surveys are now being augmented by SMART data collection throughout the wider area during anti-poaching patrols, starting during the next reporting period (see Activity 3.5).

Activity 2.5. Analyse survey data annually and report results back to all stakeholders in project areas in annual reports.

Data from the biodiversity monitoring surveys is in the process of being analysed and a report produced. As mentioned in the last report, this data analysis and report is now in Q3 (Oct-Dec) so results can be used to inform CRB Annual Work Plans.

Output 3

Activity 3.1. Provide basic training for 30 new CRB scouts in year 1. Basic training is a 3-month approved curriculum course run with the Zambian Department of Parks and Wildlife.

This project partners with the local communities to protect natural resources by sponsoring Community Resource Board Scouts, covering training costs, equipment, uniforms, on-going management support and monthly salaries. This improves the livelihoods of rural communities through job creation as well as increasing the capacity of Community Resource Boards to implement their Annual Work Plans and reduce the main threats to biodiversity (bushmeat poaching and deforestation).

Delta Scout Selection and Training: The 2020 “Delta” CRB scout selection process was completed by the end of February 2020 (in the last reporting period). A total 717 community members from partner CRBs were considered and 76 applicants (53 men and 23 women) and reported for training in July 2020. During this reporting period, the scouts selected undertook the three-month training course on “Basic training in wildlife and forest conservation management” which also includes a component on basic human rights approaches and local legislation on law enforcement at Chunga Training School, facilitated by Department of National Parks and Wildlife (DNPW) in conjunction with Forestry Department (FD) and in consultation with BioCarbon Partners (BCP). We anticipate that at least 45 scouts will be graduating during the first week of November 2020, after which plans to formally employ them and include them as part of the deployment team will be done.

Activity 3.2. Provide in-service training for 60 CRB scouts and 40 partner organisation scouts in year 1. In-service training is 2 weeks of intense refresher training run with external consultants and the Department of Parks and Wildlife, designed to be run annually to avoid skill fade, refresh knowledge on protocols to be followed, and identify and address problems.

Refresher training done for 41 scouts; outstanding for 19 due to COVID restrictions on large gathering but to be completed by end of 2020. The training seeks to refresh knowledge on protocols to conduct law enforcement activities, as well as learn about the proper management of their natural resources. The course instructors are government officers under the Department of National Parks and Wildlife (DNPW). The course content consists of basic wildlife and forestry management with community sensitization as well as human/wildlife conflict resolution. Topics covered include: Botany and Mammalogy, Law and Human Rights, Community Based Natural Resources Management, Prosecution and investigations, Field crafts and survival, Ballistics and weapon handling, Patrol systems and techniques.

Activity 3.3. Provide additional equipment revealed as necessary for all scouts during the recent CRB Work Plan development process (3.1.).

Equipment bought with Darwin funding as co-financing for 65 scouts, of which 56 are already in patrol. As the total number of scouts after the graduation of the 45 Delta scouts will be 101, there will be need to source funding for 36 kits that will be outstanding from the 65 procured.

Activity 3.4. Provide the required management support for anti-poaching activities in phase 1 project areas revealed in the recent CRB Annual Work Plan development process.

CRB scouts are tasked to address the greatest threats within the project area identified through 45 hrs/month of surveillance flights provided by BCP, which are able to record locations of illegal poacher's camps and areas of deforestation from the air, and feed this information back to the BCP Conservation team responsible for scout deployments. Anti-poaching teams are issued with specific "task orders" prior to a patrol, based on information received during aerial surveillance flights, and from community informants, allowing for a targeted approach to the anti-poaching operations. This adaptive deployment of anti-poaching effort is now facilitated by the implementation of SMART during this last reporting period (see Activity 3.5). SMART data allows anti-poaching patrol routes and the locations of any wildlife or illegal activities seen during the patrols to be mapped. The combination of SMART patrol data and aerial flights allows scouts to continue to be deployed to areas of conservation concern e.g. with evidence of poaching activity, encroachment etc. until data shows an improvement in these affected areas. This adaptive approach and strategic deployment allow the security provided to have a meaningful presence in very large areas while scout numbers are still low. The anti-poaching management team is available 24/7 to support the teams on the ground. Additionally, face-to-face engagement is kept up between the management and the scout teams during resupplies and post patrol debriefs. Furthermore, CRB Annual Work Plans include community patrol activities tailored to deal with encroachment and fire management i.e. early burning, development of fire breaks as well as fire-fighting.

Activity 3.5. Review and improve the SMART model for data collection by scouts.

Consistent and good quality data collection during biodiversity monitoring surveys and anti-poaching patrols is key to adaptive management and project evaluation. Equally, as explained in Activity 3.4. above, the capacity to monitor scout patrols enables management to better plan anti-poaching efforts across the landscape. Developed by a consortium of NGOs, SMART (Spatial Monitoring and Reporting Tool) is a computer-based platform used to measure, evaluate, and improve the effectiveness of wildlife law enforcement patrols. During the last reporting period a new SMART model was custom designed to serve an array of adaptive management needs, from biodiversity monitoring to optimising security efforts. This model needed to be good enough for all monitoring teams and anti-poaching scouts to effectively use to record data in a way that was simple to use, limits mistakes and feeds into one central database for ease of review and management. During this reporting period, this model has been tested and refined. Additionally, training for CRB scouts, monitoring teams and data managers (and members of the Department of National Parks and Wildlife and government Forest Department supported by BCP) was carried out. The approach used was to train 3 trainers and data managers within BCP who have in turn trained SMART mobile data collectors that include the 56 scouts and 4 officers from the Department of National Parks and Wildlife who are attached to the deployment teams.

Activity 3.6. Review SMART patrol data and produce a quarterly report on scout activities to review during the quarterly meeting with CRBs.

Project specific databases managed by BCP data managers have been set up to store all patrol data. After each patrol, a debrief is held between the patrol team and conservation officer/manager, also a database manager to migrate data from SMART mobile to SMART desktop. After which data quality control is done by the manager and patrol leader by reviewing each entry/observation. Any clarifications are given at this stage after which the data is regarded as final and included in the debrief report, which contains patrol maps and recommendations. The debrief reports are compiled into monthly reports then quarterly reports and finally annual reports per site which ultimately feed into management actions. Recommendations in each report are checked and shared with relevant stakeholders such as

the CRBs, DNPW and FD after which decisions are made to include the recommendations in future operations.

Activity 4.1. Design and carry out social surveys to provide a baseline on the value standing forests and living wildlife has for local communities in the areas where the community camera trapping will be piloted, prior to the start of this pilot.

Survey design was based on that of Ruaha Carnivore Project in Tanzania, and compiled by Naomi Moss who has experience with social surveys. Despite the local dialect being Nsenga, the survey is in English. Drafts were shared with individuals that have experience with social surveys in Zambia for feedback on question and answer phrasing to ensure a) easy translation to and from the local dialect Nsenga, b) be relevant to the target communities, and c) to be as succinct as possible while still collecting all required information.

Target villages were selected based on proximity to wildlife areas and severity of human-wildlife conflict in 2019 and 2020. Surveys were carried out with the Community Liaison from Munyamadzi Game Reserve, Peter J Lungu, who also acted as interpreter; Peter was briefed on the aims of the survey and social survey best practice. Each question and answer was discussed thoroughly with Peter before the surveys were conducted to ensure minimal translation errors and full understanding of the questions, and answers, and how they could be rephrased if necessary. Naomi Moss conducted both surveys to ensure maximum consistency.

Activity 4.2. Secure agreements with two villages, inside the project phase 1 area, for a community camera trapping pilot.

Written and oral agreements have been secured with Chalubilo Village Complex (151 households) and January Village Complex (53 households). Meetings were held with community members to discuss the scope of the project, the nature of a pilot, terms and conditions, benefit allocation and distribution design, etc.; after explaining this, members were asked if they wanted to be part of the project. Once verbal agreement was secured, three signatures per village complex were added to a document confirming their agreement to participate in the pilot and adherence to the terms discussed. A meeting was held with Senior Chief Luembe to explain the project; his blessing was given orally and he fully supports the link between wildlife conservation and community benefit/development this pilot invokes.

Activity 4.3. Select village representatives to manage cameras and deploy cameras for community camera trapping pilot.

This is ongoing. Three representatives have been selected in each village complex and training is ongoing. The final representative per village complex will be selected in consultation with community members. More advanced training is required as some cameras are resetting the times and dates programmed into them at deployment so these settings all require checking and adjusting at each battery and card change. This training will be given during the next reporting period, and refresher training given during monthly visits to collect and review photos.

Activity 4.4. Review camera trap data with participant village representatives monthly.

Due to Covid-19 precautions not being followed by the vast majority of community members, and there being numerous high-risk individuals in the participant villages, meetings and interactions are kept to a minimum. Camera trap data are shared with village representatives each time the cards and batteries are changed (i.e. monthly), representatives then share the information with other members in that village complex. Each quarter there is a community meeting to discuss benefit sectors for that quarter, at these meetings a list of sightings, dates and times is shared with community members and printed copies are handed out with each headman/headwomen retaining their own copies of all documents relating to the project; permission to post these documents at the school and clinic are pending.

2a. Give details of any notable problems or unexpected developments/lessons learnt that the project has encountered over the last 6 months (for Covid-19 specific delays/problems, please use 2b). Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

There was a delay in adding the second village to the Community Camera Trap project - see COVID-19 related challenges below. This means Village 1 pilot will end March 2021 and Village 2 pilot ends in September 2021. However, this will still provide us with 2 quarters of "full" benefit amount per village and then "competition" for the other quarters (currently running), so it will be good to see how the separate modes work for future design of the project, especially with regard to assigning a monetary value to points.

It has become evident that the CCT project will get annual requests for seed maize bought by the benefit allocation. However, this is not sustainable and does not help to achieve sustainability in the project area. Although this will not impact on timelines or budgets, it is something we need to bear in mind when considering the roll-out of this pilot at the end of the project period. One way to respect both sides of this is to agree to purchase seed maize for those that implement certain agricultural practices such as holistic management as per the Savory Institute, conservation farming, agroforestry, soil conservation, zero burning, not new tree cutting etc so that we achieve overall conservation goals and address local human population needs/wants.

2b. Please outline any specific issues which your project has encountered as a result of Covid-19. Where you have adapted your project activities in response to the pandemic, please briefly outline how you have done so here. Explain what residual impact there may be on your project and whether the changes will affect the budget and timetable of project activities.

As a result of COVID19 the BCP cost base has increased as we put up COVID related measures within our 6 offices as well as support measures such as soap donations (3.5 tons) to households within the Luangwa Community Forest Project (LCFP) area. Furthermore, BCP developed a REDD+ Emergency Support Fund through which we donated ZMK to14 tourism related businesses to assist with human resource costs for the community members hired by these businesses during this period when business related income is almost at zero. The idea behind the emergency fund was to reduce incentives from poaching and unsustainable charcoal production.

BCP has also had extreme downward pricing pressure on carbon credits (credit pricing has reduced by at least 20%) and the justification has been that COVID has knocked the World economy as well as the price of oil – which directly links to one of our big buyers of the Lower Zambezi REDD+ Project credits as they have announced a large-scale lay-off about 10,000 people. In addition to that, we have also observed that other buyers have been postponing their payments to later in the year when the initial expectation was that payments would be made within the first half of the year.

Project activities have also been directly affected by COVID-19 as planned activities such as training of scouts or biodiversity monitoring teams under the REDD+ projects could not take place at the planned date due the social distancing requirements. Even though these have now been completed, they cost more than planned due to extra COVID-19 prevention measures that had to be employed. Planned stakeholder meetings have in some cases taken place with fewer participants than required thus increased logistical costs as several low attendance meetings have to be held instead of the cost effective single large-attendance meeting to ensure adherence to social distancing requirements. Lastly, field equipment supply chains have also been disrupted; the majority of field equipment such as scouts' patrol kits are not locally available and need to be purchased from South Africa whose borders were closed with various restrictions put on goods leaving the country thus goods were received late.

The Zambian economy was already weak, and COVID-19 is causing larger currency fluctuations than normal. To help reduce the impacts of this on the funds available for project

work, a Zambian USD account was set up during this reporting period. LL keeps funding in a GBP account in the UK and only sends money to Zambia as needed but fluctuations in the value of the Pound to Kwacha still makes budgeting more difficult, and declines in the value of the pound due to Brexit has also been something we are aware of.

The person responsible for managing the Community Camera Trap pilot project had a baby in March 2020; this was known about and plans for child care support were made to ensure minimal impact on work output. However, since the emergence of the COVID-19 pandemic, access to safe child care support has been difficult and this has, at times, caused delays in holding community meetings, deploying the second village cameras and procurement of benefit items. A suitable carer was found in September 2020 so this has now been resolved.

2c. Have any of these issues been discussed with LTS International and if so, have changes been made to the original agreement?

Discussed with LTS:	Yes/~~No~~
Formal change request submitted:	Yes/~~No~~
Received confirmation of change acceptance	Yes/~~No~~

3a. Do you currently expect to have any significant (e.g. more than £5,000) underspend in your budget for this year?

Yes ☐ **No** ☒ Estimated underspend: £

3b. If yes, then you need to consider your project budget needs carefully. Please remember that any funds agreed for this financial year are only available to the project in this financial year.

If you anticipate a significant underspend because of justifiable changes within the project, please submit a rebudget Change Request as soon as possible. There is no guarantee that Defra will agree a rebudget so please ensure you have enough time to make appropriate changes if necessary. Please DO NOT send these in the same email as your report.

4. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures?

No.

If you were asked to provide a response to this year's annual report review with your next half year report, please attach your response to this document.

Please note: Any planned modifications to your project schedule/workplan can be discussed in this report but should also be raised with LTS International through a Change Request. Please DO NOT send these in the same email.

Please send your **completed report by email** to Darwin-Projects@ltsi.co.uk. The report should be between 2-3 pages maximum. **Please state your project reference number in the header of your email message e.g. Subject: 25-001 Darwin Half Year Report**