Darwin Initiative Main Annual Report

To be completed with reference to the "Writing a Darwin/IWT Report" Information Note: (https://www.darwininitiative.org.uk/resources-for-projects/reporting-forms-change-request-forms-and-terms-and-conditions/).

It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

Submission Deadline: 30th April 2021

● Darwin Project Information

Project reference	26-016
Project title	Lion Carbon: creating biodiversity value and sustainable management through REDD+
Country/ies	Zambia
Lead organisation	University of Oxford
Partner institution(s)	BioCarbon Partners; Lion Landscapes
Darwin grant value	£337,474
Start/end dates of project	1st May 2019 – 30th Oct 2021
Reporting period (e.g. Apr 2020 – Mar 2021) and number (e.g. Annual Report 1, 2, 3)	Apr 2020 – Mar 2021 Annual Report 2
Project Leader name	Prof David Macdonald
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
Report author(s) and date	Alayne Cotterill, Chaona Phiri, Nicola Caruthers, 2021

1. Project summary

Lion Carbon is a scalable and sustainable biodiversity conservation model, which links payment to local communities (generated through the REDD+ avoided deforestation mechanism) to 30-year Community Forest Management Agreements. Lion Carbon addresses the proximate threats to biodiversity (poaching, habitat loss, and poor management) through strengthening local and regional capacity to manage natural resources, and the social threats (poverty and undervalued biodiversity) through job creation and the distribution of benefits from verified forest carbon offsets to local communities.

An estimated 428 million people depend on African dryland forests for subsistence. Destruction of these forests contributes to climate change, threatens biodiversity and exacerbates local poverty. Zambia has the highest deforestation rate in Africa, losing forest four times the size of New York City every year for charcoal and timber.

BCP has secured 30-year Community Forest Management Agreements with local chiefdoms over 1 million hectares of the Luangwa-Zambezi ecosystem in Zambia - home to several endangered and vulnerable species (including lion, African wild dog and Southern ground-hornbill) and some of the country's poorest communities. In return for forest protection activity, communities receive income from the sale of REDD+ offsets, while alternative livelihood interventions direct communities away from destructive practices including unsustainable charcoal production and forest felling.

Baseline surveys carried out by BCP to understand perceptions, values and social norms with regards to the use of natural resources indicate that forest protection alone, however, is not enough to conserve biodiversity. Poverty, human population growth, and a lack of wildlife management capacity cause unsustainable bushmeat poaching, resulting in 'empty forests'. Wide ranging pinnacle carnivores such as the African Lion are often the first species to be extirpated, impacted by the loss of prey and habitat, and by unsustainable human offtakes (snaring and poorly managed trophy hunting). The Lion Carbon model augments BCP's REDD+ activities by including the protection of wildlife and building local and regional capacity to manage the sustainable use of natural resources. As a wide-ranging pinnacle carnivore with approximately 20,000 left on the planet and classed as vulnerable on the IUCN Red List, the African lion is an umbrella species for the Lion Carbon project; a growing population of lions being indicative of biodiversity conservation success.

This project is being undertaken in the Luangwa Valley, Zambia (Project Map-Appendix 4).

2. Project partnerships

Lion Carbon is a collaboration between the lead organisation (University of Oxford), a Zambian community forest management program developer (BioCarbon Partners - BCP) and an international large carnivore NGO (Lion Landscapes - LL). During this reporting period, there have been several events that reflect a strengthening of relationships between partners. Lion Landscapes (operating in Kenya and Zambia) has formally merged with University of Oxford WildCRU's Ruaha Carnivore Project (operating in Tanzania) and received independent UK charity status. The new Lion Landscapes is now in the process of applying to become a CIO and remains affiliated with the University of Oxford's WildCRU. The strength of this relationship is demonstrated by David Macdonald being both the founding Director of WildCRU and on the Board of Directors for the newly merged Lion Landscapes. Additionally, Amy Dickman, now Co-CEO of Lion Landscapes with Alayne Cotterill, will become the new Director of WildCRU when David steps down at the end of 2021.

The partnership between Lion Landscapes and BioCarbon Partners was also formalised during this reporting period when both parties signed a formal partnership agreement (see Annex 6 in supplementary materials) which clearly outlines an ongoing commitment to collaboratory conservation work in the landscape. This formal partnership agreement was signed because the experience of working together on this project has proved to be positive - both Biocarbon Partners and Lion Landscapes have complementary skill sets and by working together in close partnership can achieve much more in the way of conservation and community development than by working independently. Additionally, the partners developed a new premium carbon offset 'Lion Carbon' https://www.lionlandscapes.org/lioncarbon, and Lion Landscapes and University of Oxford WildCRU went 100% climate positive using this offset

This project also includes partnerships that are not formally part of the project. The most important of these partnerships are with the Community Resource Boards, Zambian Department of Parks and Wildlife (DPNW), and the Forestry Department (FD).

Community Resource Boards (CRBs)/ Community Forest Management Groups (CFMGs): CRBs are the local institution with the legal mandate from the DNPW to manage natural resources in the project areas. CRBs also represent a fair and democratically elected representation of the local communities living in the project area. In the case of this project area (phase 1 and 2) the CRBs have also been officially recognised by the Forestry Department, and have been legally mandated to manage forests for the purpose of carbon sales. The technical name for such groups recognised by the Forestry Department are Community Forest

Management Groups (CFMGs). Therefore the CRBs are also the CFMGs. This was done because the CRBs were already established in the communities throughout the area and it was felt that working within the same community-based resource management mechanism would be quicker and less confusing for the communities. It also ensures all partners effectively work together to conserve both forests and the wildlife they support. It is important here to be clear that the CRBs and CFMGs, while mandated by different government departments, are one and the same group of people in all project areas. During the last reporting period it was decided that CFMG was the term that would primarily be used for most documentation. For the purpose of this report, we will use both. All project activities are therefore directed through the CRB/CFMGs or in close partnership with them. BCP holds 30 year agreements in the form of Community Forest Management Agreements (CFMA's) with each of the CRB/CFMGs within the project area.

Zambian Department of National Parks and Wildlife (DPNW): DNPW is a key partner in the selection, training and management of community scouts, and in the formation of the annual Community Resource Board Work Plans. This formal partnership between DNPW and BCP is described in the renewed Memorandum of Understanding for 5 years signed 07 February 2020 (Annex 7 in supplementary materials). The basis of this partnership is the protection of wildlife habitat and implementation of wildlife conservation projects and specific objectives of this MoU are in line with outcomes from the Darwin project initiative.

Zambian Forestry Department (FD): FD is a key partner in the management of forests and the REDD+ process. The MOU held between BCP and FD is currently being strengthened and renewed. The new updated MOU will hopefully be available during the next reporting period but the previous MOU is included as Annex 8 in supplementary materials.

3. Project progress

3.1 Progress in carrying out project Activities

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

MOUs with CRB/CFMGs regarding the allocation of community scouts to patrol REDD zones and assist with Biodiversity Monitoring have been renewed. CRB/CFMGs have completed Annual Work Plans (Annex 9 in supplementary materials) upon which conservation fees have been disbursed to them to implement. The overarching Community Forest Management Agreements held with the CRB/CFMGs, and the related Annual Work Plans developed and reviewed in these meetings, are important steps in achieving Outcome 1: Appropriate and adaptive resource management at the Community Resource Board (CRB)/Community Forest Management Group (CFMG) level in all phase 1 project General Management Areas (GMAs). A major highlight from the work plans was the inclusion of a fire management strategy as well as the patrols to deal with encroachment in the project zone. Uncontrolled burning is a massive forest and wildlife conservation threat in Zambia, as well as counter to the climate change objectives of this work. To assist the CRB/CFMGs, BCP is currently in the process of recruiting a fire management consultant to provide capacity enhancement and technical support to the CRB/CFMGs. This consultant will train BCP, GRZ partners and CRB/CFMGs in 5 key areas in readiness for the 2021 dry season and beyond:

1) Best practices for prescribed burns in the cool, early dry season,

2) Best practices for fire breakout preventive measures such as fire guards and fuels reduction,

3) Best practices for monitoring and reporting fire breakouts,

4) Best practices for fire breakout preparedness and response strategies,

5) Best practices and skills for fighting fire breakouts.

Quarterly meetings with the CRB/CFMGs are on-going and the Forest Department (FD) has been engaged to ensure that CRB/CFMGs adhere to the reporting requirements in the Community Forest Management Agreements. A combined team of BCP, Department of National Parks (DNPW) and FD will conduct capacity needs assessments during the next reporting period, to identify potential training needs for the CRB/CFMGs for capacity enhancement. Funding for the needs assessment and capacity training has been secured from a local partner and the program will be rolled out within Q2 of 2021 as part of the implementation of BCPs SOLI strategy (Strengthening Of Local Institutions). Project activities are shared with the Chiefdom partners via monthly reports from BCP (Annex 27 in the supplementary materials), allowing all partners to remain fully aware of efforts made towards shared goals.

Activity 2.1. Design, agree with stakeholders and publish detailed biodiversity monitoring methods, protocols, and sampling framework for the phase 1 project area.

This activity was completed in the previous reporting period but the Biodiversity Monitoring Plan is designed to be a living document that is annually reviewed and updated where necessary. The latest version of the Biodiversity Monitoring Plan, after a review at the beginning of 2021, is provided as Annex 10 in the supplementary materials.

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

Most of the biodiversity monitoring equipment was purchased during the last reporting period. However due to delays in partner organisations receiving funding, and shipping and customs delays due to Covid-19 the equipment was shipped and received on site during this reporting period. We managed to get all the basic equipment needed for surveys to the site in one shipment (camera traps) and in extra suitcases carried by 2 Zambian colleagues travelling from the UK back to Zambia. This equipment was adequate for the data collection but more equipment was needed to improve the logistics for the surveys. This was purchased and shipped during this survey period and is on site for this year's surveys. See equipment list with current status and location (Annex 11 in supplementary materials). Note, LL recently started using EZ asset management software, and all equipment will soon be entered into this system so we are able to track each piece of equipment from purchase to deployment, and during its lifetime.

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 YR1 annual 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 having 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 to ensure everything learnt was fresh. This change to the original described activity (above) was supported in the feedback from the last annual report. During this reporting period, two more sets of formal distance sampling and occupancy modelling surveys – the early and late dry season surveys - have been run. These surveys were run on schedule, and two days of intense training (4 days in total for the year) given to the selected biodiversity monitoring teams immediately prior to the surveys (see training records - Annex 12 in supplementary materials). The number of scouts and Forest Monitors used in the formal surveys varies from 24-28 depending on availability, as all scouts

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have a primary security role. For almost all of these scouts, this was the second (or more) year of running surveys and so this was refresher training for them. Nonetheless, all aspects were covered. 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: SMART data collection (Activity 3.5), is carried out by all active scouts. During this reporting period, 56 Community Scouts and 4 DNPW Wildlife Police officers have received full training in the use of SMART. Adequate and regular training was an important part of ensuring that this year's contribution to Activity 2.4 below was achieved to a high standard.

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 twice in this reporting period, as planned (see Biodiversity Monitoring Plan and individual survey plans - Annex 13 in supplementary materials). 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 (60 cameras per array) were deployed for 8 weeks in Rufunsa Conservancy and up to 12 weeks in Munyamadzi and Kazumba Game Ranches, according to the methods described in the Biodiversity Monitoring Plan, produced during the previous reporting period (see also the individual camera trap survey deployment plans and maps - Annex 13 in supplementary materials) and provided important occupancy modelling data for the rarer, nocturnal and more elusive species that are hard to capture during distance sampling. Structured surveys are now also being augmented by SMART data collection throughout the wider area during anti-poaching patrols, starting during this reporting period (see Activity 3.5). All survey methodology is described in detail in the Biodiversity Monitoring Plan provided as Annex 10 in the supplementary materials.

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 was analysed and an Annual Biodiversity Monitoring Report produced (Annex 15 in the supplementary materials) to inform CRB/CFMG Annual Work Plans and wider wildlife management planning on the landscape. The collection and analysis of good quality biodiversity monitoring data, and sharing this data with other land, forest and wildlife managers helped us to achieve Output 2 for this year: *A biodiversity monitoring plan, capable of informing a process of adaptive biodiversity management, embedded in Chiefdom Conservation Management Plans in the phase 1 project area.*

Activity 3.1. Provide basic training for 30 new CRB/CFMG scouts in year 1 and 30 further new CRB/CFMG scouts during year 2. 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 CRB/CFMG Scouts, covering training costs, equipment, uniforms, rations, on-going management support and monthly salaries. This improves the livelihoods of rural communities through job creation as well as increasing the capacity of CRB/CFMGs to implement their Annual Work Plans, ensure their contribution to natural resource management and reduce the main threats to biodiversity (bushmeat poaching and deforestation).

Delta Scout Selection and Training: The 2020 "Delta" CRB/CFMG scout selection process was completed by the end of February 2020 (in the previous reporting period). A total 717

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community members from partner CRB/CFMGs were considered and 76 applicants (53 men and 23 women) 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). 50 scouts graduated in November 2020 (see certificates of completion - Annex 16, and training report - Annex 18 in supplementary materials) out of which, 34 are male and 16 are female. During the following few months, these scouts were inducted and absorbed as part of the REDD+ project as part of the deployment team. This brings the total number of community scouts trained, equipped, deployed and currently remaining on payroll on this Darwin project to 65 (102 including the baseline of 37 scouts at the start of the project), five more than planned (see scout payroll - Annex 17 in supplementary materials)

Activity 3.2. Provide in-service training for 60 CRB/CFMG scouts and 40 partner organisation scouts in year 1 and 90 CRB/CFMG scouts and 40 partner organisation scouts in year 2. 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.

As well as the training received by new scouts, refresher training for current scouts is an important part of ensuring high standards are maintained and Output 3 is achieved. Restrictions on large gatherings due to Covid (see section 14 below) meant that the capacity to carry out refresher training was reduced. During this reporting period refresher training was completed for 41 scouts (see training logs and reports - Annex 18 in supplementary materials) and the rest were postponed to this year. Instead, scouts were given careful oversight and management support, including regular review sessions, throughout the reporting period. The formal training seeks to refresh knowledge on protocols to conduct law enforcement activities, as well as learn about the proper management of their natural resources so much of this was covered during review sessions with managers. The formal 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/CFMG Work Plan development process (3.1.).

Extra equipment needed for the 102 community scouts on payroll during this reporting period was bought with co-financing through REDD+ offset sales. A list of equipment purchased is provided in appendix 5. As this was not directly funded by Darwin, no other evidence is provided. We can provide more on request. Proper uniforms and equipment is an essential part of ensuring that Output 3 is reached.

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

CRB/CFMG 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 (See example of a patrol report - Annex 28 in the supplementary materials). This adaptive deployment of anti-poaching effort is now

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facilitated by the implementation of SMART mobile 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. Furthermore, CRB/CFMG 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.

This adaptive approach and strategic deployment allow the security provided to have 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. This regular and consistent management support has been particularly important in keeping scout activities and engagement high during Covid-19, when some scouts have not received formal refresher training.

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 record data in a way that was simple to use, limit mistakes and feed into one central database for ease of review and management. During this reporting period, this model has been tested and refined. In March 2021, all teams of BCP supported community scouts were switched over to using the new SMART model for collecting data on their patrols.

A significant aspect of using SMART is the initial training and follow-on refresher training required for data collectors to begin using the system and to ensure a high quality of data collection is maintained. Initial training for CRB/CFMG scouts, monitoring teams and data managers (and members of the Department of National Parks and Wildlife supported by BCP) was carried out in the reporting period (see SMART training report - Annex 18 in the supplementary materials). 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. In March 2021, 58 community scouts received refresher training or initial training in SMART data collection, this included both new recruits and scouts who were trained in the 2020 training and was run by a trainer from Panthera. An additional 32 community scouts, again both new recruits and those trained in 2020, will receive the same training in May 2021.

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

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 (see example - Annex 19 in supplementary materials) 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 CRB/CFMGs, DNPW and FD after which decisions are made to include the recommendations in future operations.

Overall, the addition of more scouts, high levels of training, equipment and management support provided for community scouts, coupled with the use of SMART by scouts with regular data reviews, all contribute significantly to Output 3: 'Increased capacity of Community Resource Board to implement their biodiversity management plans and reduce the main threats to biodiversity (bushmeat poaching and deforestation) across the phase 1 project area'.

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

Written and oral conservation agreements were secured with Chalubilo Village Complex (160 households) in March 2020 and January Village Complex (64 households) in August 2020. These agreements clearly outlined the "who, what, where, why, when, how" of the pilot project, introducing the project stakeholders, project location, reason for the pilot, timeline, project aims, and how it would work (Annex 20 supplementary materials). The latter is the longest section detailing methods of the pilot, and the points allocation structure. The pilot has continued to hold the support of Senior Chief Luembe and the community at large. However, during the pilot period, it became clear that penalties for activities that undermine conservation efforts (i.e. evidence of poaching, habitat destruction/degradation) should be built into these agreements. This need was highlighted by animals with visible snares being captured on the camera traps. However, securing an amended agreement was not achieved during this reporting period. January village complex is deliberating on a proposal to use benefit funds to purchase/maintain seedlings of indigienous and locally suitable hardwood species as a "penalty" for records of habitat destruction (e.g. bush fires, people carrying fresh poles), and they have agreed to snared animals receiving zero points, however the second and amended agreement has not yet been signed. The amended agreement for the January village complex is likely to be signed in May or June 2021. Chalubilo village complex refused to sign a new amended agreement as their final quarter for the Pilot study was concluding imminently. A new amended agreement, including a system for penalising behaviors that damage conservation efforts, will be made before any continuation of the project.

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

Community consensus was not reached in the Chalubilo village complex as to which representative would receive training, so LL staff ran the cameras in this village. This showed a lack of willingness to engage on these conservation issues, although this has improved with time and trust building through the project. Continuing with this village complex, despite their initial lack of commitment, was considered worthwhile as a trust building and engagement exercise in a village area where this is badly needed. If the pilot continues after the evaluation carried out during the next reporting period, then the election of a village representative will be a mandatory part of the process. For January village complex, Abidon Mwanza was selected by the village complex as the Community Camera Trapping Officer and received training in how to turn on, check and reset time and date, change memory cards and batteries and reposition cameras once a month to avoid theft/damage. Abidon also maintains the area around the cameras, checks on them once weekly and continues to raise awareness about the pilot with surrounding communities.

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

Due to Covid-19, meetings were held quarterly instead of monthly; the table below provides dates for the various meetings for the project quarters from March 2020 to March 2021. On several occasions meetings with Chalubilo village complex had to be postponed due to insufficient turnout (<20% households represented) for decisions to be made fairly; the fourth and final quarter meeting for this village will hopefully be held in the second week of May. Meetings for each village complex are held separately and a minimum 45% representation of households is required for decisions to be made on benefits. The preference is to have an

equal proportion of genders and age groups present at community meetings however this rarely is the case, with women being present in larger numbers and a few core individuals who attend each meeting. Approximately 30 - 40% of households attended distribution meetings. Hard copies of wildlife sightings, points awarded, funds awarded, photographs and any issues (e.g. camera theft, evidence of poaching) are disseminated at each meeting before open discussions commence; benefit sectors and items for purchase are discussed last once all questions, concerns and any new agreements are made (e.g. agreeing on penalties for evidence of poaching and stolen/damaged cameras). Community members are encouraged to confirm the points awarded to each sighting, the total number of points and the correlating funds, and raise any questions, comments or concerns they may have. Benefit sectors are decided upon as a community. Once consensus is reached regarding benefit sectors and items for purchase, which sometimes takes more than one meeting, the distribution date is confirmed. In addition to these meetings, one meeting was held with a non-participating village, James Village, to discuss the theft of cameras from both village complexes. This was attended by the January CCT Officer Abidon Mwendwa, LL Staff and numerous members of James Village.

Permission was granted by the clinic and school to post hard copies of the wildlife sightings, points earned, funds spent in each quarter and a selection of photographs. This has increased the transparency, and cultivated interest in the pilot. These locations are not ideal as they are open to the wind and roofs leak, so these hard copies do not remain legible and in place for long. In future, sealed, single-purpose notice boards at each site would address this challenge and will be included in the next phase of this project. Records of the points awarded for camera traps and the benefits given are included as Annex 21 in the supplementary materials.

Dates for community meetings held relating to the reporting period:

	Initial set-up		Quarterly points and benefits	Benefits distributions	
Chalubilo	04/03/2020	Q1	19/06/2020	26/08/2020	
		Q2	29/09/2020	15/10/2020	
		Q3	04/12/2020	20/12/2020	10/01/2021
		Q4 attempt	31/03/2021		
		Q4 attempt	03/04/2021		
		Q4 attempt	04/04/2021		
January	26/08/2020	Q1	04/12/2020	20/12/2020	10/01/2021
		Q2	31/03/2021		

3.2   Progress towards project Outputs

Output 1. Appropriate and adaptive resource management planning at the Community Resource Board (CRB)/Community Forest Management Group (CFMG) level in all phase

1 project General Management Areas (GMAs). *Measurable Indicators: 1.1. Eight (quarterly) CRB/CFMG led conservation planning review meetings for each GMA (3) in the phase one project area by project end. During which, performance of the CRB/CFMG and BCP are reviewed against CRB/CFMG Work Plans.*

During this reporting period we have put in place key processes needed for appropriate and adaptive resources management at the CRB/CFMG level i.e. CRB/CFMG Annual Work Plans (Annex 9 in the supplementary materials) and regular minuted meetings to review progress against these plans. Following the recognition of significant capacity gaps in areas such as reporting, BCP is now in the process of subcontracting a capacity development partner to support the needed improvements. It is anticipated that the capacity building will start in June 2021.

Output 2. A Biodiversity Monitoring Plan, capable of informing a process of adaptive biodiversity management, embedded in CRB/CFMG Annual Work Plans in the phase 1 project area. *Measurable Indicators: 2.1. Biodiversity Monitoring Plan document 2.2. Results from the annual analysis of all biodiversity monitoring data.*

The key elements for long-term cost-effective biodiversity monitoring, in the form of an in depth Biodiversity Monitoring Plan (Annex 10 in the supplementary materials), were put in place during year 1. During this reporting period, this plan was reviewed and expansion areas identified for 2021 surveys. As with all long-term monitoring plans, consistency and quality are key to success and so regular and frequent training and review is a core part of achieving this output. Ensuring that the Biodiversity Monitoring Plan resulted in robust, repeatable and good quality data collection, management, analysis and reporting during this reporting period and beyond, has been achieved with frequent training coupled with the necessary systems, equipment and tools to collect and manage good quality data. Analysis and reporting has been carried out by experienced conservation statisticians, who are top in their field, ensuring that the most possible value has been gleaned from the data collected and the resulting Biodiversity Monitoring Annual Report is relevant to management needs. Overall, the Biodiversity Monitoring Plan and associated data collected, analysed and reported on should be capable of informing adaptive management over the next 30 years. The challenge over the next reporting period will be expanding to include more sampling frames within the larger area whilst maintaining data quality. Methods have been chosen to feasibly provide robust data over very large areas however, so we feel confident that this can be done.

Output 3. Increased capacity of Community Resource Board to implement their Annual Work Plans and reduce the main threats to biodiversity (bushmeat poaching and deforestation) across the phase 1 project area. *Measurable Indicators 3.1. BCP and CRB/CFMG employment records. 3.2. Scout training records 3.3. SMART data collected on patrols by scouts. 3.4. Biannual biodiversity monitoring data generated during the life of the project and Scout patrol data recorded on SMART. 3.5. GIS data and analyses done as part of the monitoring required for the carbon verification process.*

The capacity of the Community Resource Boards/Forest Management Groups to timely develop and implement their Annual Work Plans and reduce the main threats to biodiversity has been considerably increased over this reporting period. This has also been enhanced by the timely disbursement of Forest Carbon Fees to the communities. The number of new scouts selected and graduated from 3 months of basic training went from 37 to 69, exceeding our goal of 60. As of March 2021, 102 CRB/CFMG scouts are still in full-time service as CRB/CFMG scouts on the payroll of this project. Suitable salaries, uniforms, equipment and purpose means that scouts are willing and able to do their jobs. CRB/CFMG capacity to effectively manage natural resources has further been built by the proper management of these scouts, and the provision of data to inform adaptive management from biodiversity monitoring, detailed forest monitoring and GIS analysis carried out as part of the REDD+ verification process. and the wider implementation of SMART as a data collection and scout management tool (all described in section 3.1).

Output 4. Linkage between payments from the sale of REDD+ offsets and wildlife conservation performance is strengthened for local communities

How well we are doing against this output will only be clearly revealed once the post-pilot questionnaires are collected, and post and pre-pilot questionnaires (Annex 22 in the supplementary materials) analysed. However, the dialogues with the communities during the pilot have indicated a growing understanding of how the presence of wildlife can/does provide benefits for the local community. This was a short pilot with not much time to work with the communities because of Covid restrictions. However, engagement of community members was seen to increase during this reporting period. Differences between the communities engaged in this program and those engaged in the projects in Tanzania, where the CCT programme was developed, have meant adaptation has been necessary and more time is needed to properly tailor this programme to these new communities. A review and recommendations of improving the Community Camera Trapping pilot for this community, and a full description of progress towards this goal will be reported on in the next report.

3.3   Progress towards the project Outcome

Outcome: A scalable and sustainable biodiversity conservation model that increases the value of biodiversity to local communities and develops local and regional capacity for the sustainable management of natural resources. *Measurable Indicators: 0.1. All activities relevant to ongoing CRB/CFMG functioning and adaptive biodiversity management (excluding the community camera trapping pilot, which is not yet tested) in the phase 1 project area 100% funded by the sale of REDD+ carbon offsets by 2022. 0.2. Agreed plans to expand the outputs listed below across Phase 2 of the REDD+ managed area (Fig.1) by project end. 0.3. 52,000 community beneficiaries from REDD+ carbon investment into honey production, conservation agriculture, other farming support, clean water and health in the phase 1 project area by project end.*

The Outputs in this project described in the section above are an important aspect of reaching our desired Outcome but not the only outputs required. A meaningful source of income for local communities, linked to the protection of biodiversity is also needed. In this project, that source of income comes from the sale of REDD+ carbon offsets in exchange for 30 year Community Forest Management Agreements. Verification of the Luangwa Community Forests Program (LCFP) area for the sale of REDD+ carbon offsets was achieved during this reporting period. This is, to the best of our knowledge, the biggest REDD+ project in the world in terms of beneficiaries with almost 217,000 people (108,642 in the phase 1 project area funded by Darwin) benefiting from the REDD+ funded community projects. This is considerably more than the proposed 52,000 community beneficiaries at project end. Discussions are also underway for the expansion of all the activities listed in this project over a larger area, and support for all activities linked to Outputs 1 and 3 are on schedule to be covered by REDD+ carbon financing by the end of this year.

3.4   Monitoring of assumptions

Assumption 1: *Wildlife conservation will remain an important goal for BioCarbon Partners after this project period*: This still holds true as this forms part of BCP's ongoing mission as a company.

Assumption 2: *Current Ministry of Justice Approved Memorandum of Understanding with the Department of National Parks and Wildlife (DNPW) and the Forestry Department to implement REDD+ in project areas, and work with Community Resource Boards on enforcement is not revoked*: This was renewed and re-signed during February 2020.

Assumption 3: *Current projected income (timeframe and amounts) from the sale of REDD+ carbon is realistic*: This assumption still holds true. Although Covid-19 related financial stresses

in the global REDD+ market will no doubt impact BCP's carbon sales, our projections for this project were very conservative and so we hope we will remain on track.

Assumption 4: *The theft/destruction of cameras can be kept within workable limits – only important for the camera trap surveys*: This assumption still holds true. Cameras were stolen and damaged during the initial survey and during the community camera trapping pilot but the numbers are still reasonable.

Assumption 5: *Road penetration of the project areas makes a defensible sampling of project areas logistically feasible*: This assumption still holds true. The road penetration in the project areas is low and patchy but we have chosen sampling frames that are representative of the wider area, which do have reasonable road penetration. Methods also allow the unbiased sampling of cells in larger or harder to reach areas in such a way that these areas can still be sampled but with a lower sampling effort to allow surveys to be logistically feasible.

Assumption 6: *The Biodiversity Monitoring Plan developed in this project is embedded in all long-term CRB/CFMG Annual Work Plans*: Effective long-term monitoring needs to be consistently carried out over long time periods. Our Biodiversity Monitoring Plan has been developed in a way that makes methods community scout-based and logistically and financially feasible over large areas, maximising the probability that biodiversity monitoring remains a core part of the CRB/CFMG Work Plan (supported by project partners) for the length of the Community Forest Management Agreements i.e. a minimum of 30 years. The results produced have been considered in the development of this years CRB/CFMG work plans.

Assumption 7: *A larger number of scouts, and better training, equipment and management for those scouts, will result in reduced poaching and deforestation*: This assumption still holds true and SMART data collection will allow this to be better tracked.

Assumption 8: *Trends in bushmeat poaching and deforestation are detectable during the life of the project*: This assumption still holds true and SMART data collection will allow this to be better tracked.

Assumption 9: *Allowing villages to monitor their own wildlife in their village area, and have some of the benefits received from the sale of REDD+ offsets linked to the results of that monitoring, leads to a stronger connection between wildlife conservation and benefits, and ultimately reduces poaching of wildlife*: This assumption remains true although still not fully tested. This pilot is based on a longer running project in Tanzania where allowing villages to monitor their own wildlife and tying aspects of the benefits paid to the wildlife captured on these cameras, is leading to a reduction in human-wildlife conflict. Although the relative importance of the threats to biodiversity are different between Tanzania and this project area, the basic premise that biodiversity is better protected where it is perceived to be of more value should remain the same.

3.5   Impact: achievement of positive impact on biodiversity and poverty alleviation

Stated impact in original proposal: A landscape where local communities sufficiently benefit from viable populations of wildlife and healthy habitat to ensure the long-term recovery and survival of wildlife and standing forests.

Biodiversity conservation: All community groups included in this Darwin Funded Project form part of a large contiguous wildlife corridor extending over almost 1 million hectares of threatened forest areas, linking two globally significant Transfrontier Conservation Areas (Lower Zambezi-Mana Pools to Luangwa-Nyika) critical to biodiversity connectivity for Zambia, Malawi, Zimbabwe, and Mozambique (see map in supplementary materials). In 2012, BCP assumed direct control of "Rufunsa Conservancy" a private 40,000 Hectare game reserve, and the first area to be verified for REDD+ carbon. Despite bordering the Lower Zambezi National Park; one of the most wildlife-rich in Zambia, the Conservancy was severely depleted of wildlife

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due to poaching. From 2012, BCP invested heavily in community scouts to patrol the Conservancy, and into community projects in villages next to the Conservancy. In 2012-2014, each patrol collected snares. Nowadays, the scout teams rarely collect snares despite increased patrol efforts (as evidenced now by trends in the SMART data collected). Additionally, the number of wildlife sightings reported by scouts has significantly increased (again evidenced in gata from reports, now evidenced by the SMART data collection). Lions, which had not been seen in this area for over 10 years, have started to use the area again (from ad hoc sightings of fresh lion tracks by scout patrols and other project staff), indicating an increase in prey and a decrease in disturbance. Through this Darwin project, these same anti-poaching and monitoring activities, alongside the REDD+ activities, have been expanded over a much wider area and similar changes are expected. The biodiversity monitoring Annual Report (Annex 15 in the supplementary materials) is beginning to reveal statistical trends in wildlife numbers over time.

Poverty alleviation: The activities in this Darwin project are integral to two REDD+ Carbon projects (Lower Zambezi Redd+ Project – LZRP and Lungwa Community Forests Project - LCFP) successfully verified and validated by BCP (see letter to the Director of the Forestry Department pertaining to the financial model - Annex 23 in the supplementary materials). These projects provide meaningful income (over US$4 million during this reporting period see receipts of payment - Annex 24, and carbon certificates - Annex 25 in the supplementary materials) for local community development directly linked to the conservation of wildlife habitats through the Community Forest Management Agreements. Examples of the Annual Work Plans for the CRB/CFMGs showing how these funds are being spent by the communities are provided as Annex 9 in the supplementary materials. Both REDD+ projects exhibit exceptional social impact and have been awarded CCB Triple Gold - the highest level of social impact.

https://registry.verra.org/app/projectDetail/VCS/1775
https://registry.verra.org/app/projectDetail/VCS/1202
http://langmead.com/media/?p=627.

Our Theory of Change around the provision of livelihoods support is that if we can help communities make long term investments in a shared vision for development and demonstrate that those investments are intrinsically linked to the successful long-term conservation of forests and wildlife, then livelihoods in those communities will improve demonstrably and be sustainable, while natural forests and wildlife populations will remain intact.

4.   Contribution to the Global Goals for Sustainable Development (SDGs)

The Lion Carbon Project contributes to the fulfillment of 16 out of the 17 SDGs; at the core of our implementation approach is the recognition that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our forests.https://biocarbonpartners.com/impacts/luangwa-community-forests-project/ . As Lion Carbon is being implemented in a land-locked country, the project is not directly contributing to SDG 14 (Life Below Water in Marine ecosystems) although we do promote the sustainable use of aquatic ecosystems and through improved forest management ensure the preservation of the head water of key rivers within our project area.

5.   Project support to the Conventions, Treaties or Agreements

This project directly supports the CMS-CITES African Carnivore Initiative by protecting an important remaining stronghold for Lions, Leopards and Wild Dogs, and maintaining connectivity for these (and other species on the CMS list) between four Key Landscapes for Conservation. Lions, leopards and wild dog have been regularly sighted and captured on camera traps (and sightings recorded) in the project area during this project period. These sightings, and our ability to track trends in the populations of these species, will increase over

the next few years through the use of SMART and the survey methods put in place by this Darwin project.

Project activities also support 5 of the CBD objectives. Specifically, this project aids Zambia in its commitment to the CBD objectives by providing the baseline methods and data sets (2 formal surveys during this reporting period) that help identify the components of biological diversity important for its conservation and wise use, and processes and categories of activities that impact on the conservation and sustainable use of biological diversity, in this case forests and wildlife (CBD Article 7). The development of Community Forest Management Agreements and associated work plans (developed for all of the 11 CBDs during this reporting period), along with the provision of training, financial, logistical and management support given by this project (described in previous sections) has developed institutional capacities - specifically the Community Resource Boards and the Department of National Parks and Wildlife - to ensure conservation and sustainable use of biodiversity, and to maintain viable populations of species in natural surroundings (CBD Article 8). Lion Carbon also involves the private sector (REDD+ mechanism) in developing methods for sustainable use of biological resources and involves local communities in conservation by applying indigenous knowledge systems, again through a partnership with legally mandated Community Resource Boards (CBD Article 9). Additionally, the REDD+ projects to which these Darwin funded activities are integral, adopts economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity through the generation and equitable distribution of income from the sale of REDD+ forest carbon offsets in return for 30 year Community Forest Management Agreements (CBD Article 11). The biodiversity monitoring program developed in this project (evidenced by the Biodiversity Monitoring Plan and Annual Report), and the training of Community Resource Board Scouts to carry out this monitoring, as well as training on how to protect local forests and wildlife (evidenced by training records and certificates), constitutes scientific and technical training that contributes to the conservation and sustainable use of biological diversity (CBD Article 12).

6. Project support to poverty alleviation

Poverty and a dependence on the overuse of natural resources is the root cause of deforestation, wildlife crime and general biodiversity loss at a community level in project areas. These communities historically relied on subsistence farming and charcoal production to support their families and found benefit through the destruction of wildlife habitat for charcoal production, logging and agriculture. Wildlife crime was also rife in these areas in the form of illegal poaching of bush meat.

Darwin funded activities are directly improving the local capacity of community-based institutions to better manage their natural resources and protect biodiversity, ensuring ecosystem services such as water security and food security and the provision of crucial forest products will continue to be available into the future. Darwin funded activities also support two REDD+ (Lower Zambezi REDD+ Project LZRP, and the Luangwa Community Forests Program - LCFP) by providing the necessary protection and monitoring of the biodiversity that gives these REDD+ projects their sustainability, and the triple gold status critical to their competitive ability in the market. Although Darwin funding does not contribute directly to the REDD+ activities, it does contribute indirectly. The validation and sustainability of REDD+ would not be possible without the community based resource management, protection and monitoring provided by Darwin funded activities. Through community-based forest protection and prevention of wildlife crime, the value of Carbon Stocks is protected for future sales and the positive cycle continues. Additionally, Darwin funding contributed to the development of a premium carbon offset product 'Lion Carbon' available for sale this year, which will provide more revenue for community-based conservation activities in the landscape.

Together, both REDD+ projects and the integral Darwin funded biodiversity protection and monitoring activities directly address poverty alleviation by creating long-term, sustainable, natural resource-based revenue through the REDD+ mechanism. This directly benefits 217,000 people, making BCP's REDD+ projects the biggest in the world in terms of community

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beneficiaries. Community voices (including women) are fully included in decision making processes surrounding the management of natural resources and the use of financial income from REDD+.

In 2020-2021, the Luangwa Community Forests Project generated over US$4 million in direct payments to 12 chiefdoms (see payment receipts - Annex 24 in supplementary materials) for the protection of wildlife habitat and community development. Development projects funded by REDD+ income in the area have increased access for these communities to services including education, healthcare, finance, local transport, and access to basic resources such as clean water, food and sustainable energy. The revenue from carbon sales from the Luangwa Community Forests Program (standard and Lion Carbon) directly benefit communities through:

- *Performance-based Conservation Fees for community development activities* i.e. construction of health-care facilities, educational facilities, access to clean-water, and sustainable agriculture etc.
- *Job creation increasing household income*: 102 Community scouts are currently employed, equipped and given food rations.
- *Tailored livelihood activities* targeting household level kind of empowerment viz. food and nutritional security and sustainable income generation. These are adapted to community needs in light of REDD implementation.
- *Capacity building of the Community Resource Boards* to conserve and sustainably manage the natural resources community members are still so dependent on. This is done through the development and implementation of CRB/CFMG Annual Work Plans, and through providing training, equipment and management to community scouts to be able to implement this plan.

While the financial benefits from REDD+ are significant in alleviating poverty, the combination of Darwin funded activities, and the REDD+ projects they enable also critically mitigate climate change impacts on local communities, reducing the risk of climate related instability in the future.

7.   Consideration of gender equality issues

This project addresses gender inequality in both the direct Darwin funded activities and also the indirect Darwin supported activities (i.e. the related REDD+ enterprise activities). For the activities directly funded by Darwin, gender equality has been considered for all 3 outputs. At the CRB/CFMG planning level, meetings are run in a way that women are properly included in the decision making process. Despite cultural norms that make law enforcement predominantly a male role, this project is also managing to attract women into community scout roles. A large part of the role of the community scouts will be to engage local communities in biodiversity conservation issues. We believe that female community scouts will have a better understanding of the needs of local women and the factors governing their decision making. Women will be better at engaging other local women within their communities. As it currently stands 25% of active community scouts are women, and this increases with each new intake. Additionally, as women scouts become more established, women are being included in the specialist biodiversity monitoring roles with almost 10% of these specialist scouts and first monitors being women during this reporting period from a baseline of zero. The survey roles tended to be chosen from the most experienced scouts, and a lack of women in the scout role meant this too was historically very male dominated. During the next reporting period a record number of women will be included in the teams running the surveys.

The REDD+ benefit-sharing mechanism is designed to give women equal rights and equal access to economic resources. More than half of the beneficiaries are currently women. Elections of the Community Resource Board members (The CRB/CFMG is the institution to which conservation fees are directly transferred to) are democratic. According to the Zambian Constitution, a minimum number of women are to be included on any committee or board ensuring the women will be represented.

8.   Monitoring and evaluation

Our previous annual report described the outputs from the Darwin funded activities as metrics to success, rather than what we have put in place to monitor the progress of these activities. We have tried to rectify this during this reporting period by reviewing our M&E plan, and including it as Annex 26 in the supplementary materials for this year's report. Rather than describe the number of scouts trained and deployed we are recording metrics that measure their efforts to improve forest and wildlife protection, such as number of conservation days (patrol day per scout). For example, through support received from Darwin, 102 scouts (from a baseline of 37) are patrolling the project area, with each scout covering an average of 68% of their total conservation days per month. This means 1,428 days are now recorded from a baseline of 740 days per month. The use of applications such as SMART during the last reporting period has enabled us to improve how we document and record patrol efforts and findings. Remote sensing and spatial analysis has been employed to record and document threats such as deforestation and encroachment. In addition, a number of social surveys are being used to document changes in perception as well as beneficiaries from the improved forest management. Metrics to measure the progress of the biodiversity monitoring have also been formally identified and put in place such as the percentage area covered by formal surveys and the number of usable data sets collected. Please see the full M&E plan - Annex 26 in the supplementary materials.

9.   Lessons learnt

Covid 19 has made this reporting period more challenging than most (see section 14) but Darwin funded project activities have worked well and either gone to plan or been successfully adapted to make planned progress towards project outcomes. The main challenges have been linked to training, which has not been possible in large groups but there are no real lessons learnt as teams have been responding as best they can under unprecedented circumstances. There have also been logistical challenges around getting equipment bought overseas to the project site during Covid. This has been resolved by finding a company that does smaller and faster shipments for a reasonable price, enabling us to ensure there are few shipping or customs delays.

Engaging the second village complex in the Community Camera Trapping pilot was challenging. This village complex was experiencing more human-wildlife conflict than others and so engaging them in a benefit programme was a priority for partners. In an effort to stick to our schedule, after some earlier delays with receiving the camera traps, the project was started when there was apparent consensus and desire for the project. However, with hindsight, there was still resistance by some village members. It would have been better to start with the village complex that was keen to engage on this programme and only bring in the second village complex when/if they could demonstrate greater buy-in by electing a CCT representative. We have paused the programme in this village complex and will now work with the community to evaluate and identify any further adaptations needed. The programme will only be bought back if formally requested by the majority of village members, and if a village representative is elected to help manage the programme.

Community Camera Trapping meetings, benefits purchases and distributions were not always held immediately at the end of the quarter or within one week of completion, however these tasks were completed as soon as possible. Reasons for such delays were: community members not showing up at agreed-upon times for meetings; logistical constraints (many items have to be purchased in and transported from Lusaka which is an 8 hr drive one-way from the project location and only the project manager is able to conduct these activities); staff unable to visit villages due to challenges created by COVID-19. These challenges will hopefully be mitigated in future phases by private game ranches assisting with procurement and logistics aspects, and COVID-19 vaccination programmes. Additionally, the selection of a board of representatives for each participating village complex/Village Action Group should address the issue of gathering enough village members for the meetings.

There have also been challenges linked to development of proper resource management planning within the Community Resource Boards/Forest Management Groups. Most of the training work done with community scouts has been carried out in partnership with the Dept. of National Parks and Wildlife, and the partnership with the Forestry Department has been developed later. This has meant that the community scouts have excellent training and understanding in their role as protectors of wildlife biodiversity (covered by the Wildlife Act in Zambia) but are less familiar with the proper management of forest resources. This is being remedied through applying to the government to get honorary Forest Officer status for the community scouts, and to build specialised forestry training into the current scout training programs (next reporting period) so that they have a thorough understanding of forest use laws, and the authority to act on the mis-use of forestry resources.

Tripartite coordination between the Department of Parks and Wildlife, the Forestry Department and BCP over the management of the CRB activities has strengthened through the life of the project but should have ideally been prioritised more at the very start. There have been some situations where DNPW advises the CRBs in one way, while the FD advises something different. More recently this coordination has been improved so that DNPW, FD and BCP all agree between themselves on resource management issues before then providing clear and uniform support to the CRBs.

Another lesson learned has been to prioritise better coordination with hunting operators. These are important land managers on the landscape and are extremely influential when it comes to the protection of resources in their areas. BCP now have 1 MOU with a hunting operator in the phase 1 project area, and is in the process of developing 3 more. Throughout the phase 1 and 2 project areas, there are 7 hunting operations and so efforts will continue to formalise relationships with all of them, with clearly identified shared goals around wildlife protection and regeneration. A collaborative framework for restocking the project areas with wildlife species (common prey species) is also being developed.

The greatest challenges remain with the governance over sharing REDD+ benefits with communities. While this is not part of activities directly funded by Darwin, the efficacy of the REDD+ benefit sharing mechanisms in alleviating poverty and reducing pressure on local natural resource use does affect this project's ability to achieve the stated Impact. The REDD+ projects supported by the Darwin funded activities are creating unprecedented benefits for local communities and avoiding elite capture is core to making sure those individuals that would otherwise constitute the greatest threat to biodiversity are also the people who are receiving the benefits from forest and wildlife conservation. In an effort to ensure improvement in governance of local institutions, this project has worked closely with the DPNW, which is the regulatory authority and manager of CRBs. As a result of this partnership, there have been improvements in the CRB/CFMGs planning and budgeting to ensure alignment with signed Community Forest Management Agreements and the national REDD+ strategy as well as General Management Plans (GMPs) of the various Game Management Areas (GMAs). There is still room to improve on planning and cost allocation to ensure that benefits shared with CRB/CFMG committees are not being overloaded with committee level administration costs, taking away from the funds available to Village Action Groups for the projects they have democratically agreed on. However, close oversight and regular meetings with all partners working closely together has meant that CRB governance continues to improve.

10.   Actions taken in response to previous reviews (if applicable)

We thank the reviewer of our last annual report for the helpful feedback given. The points raised are listed below, along with the actions we have taken to address these points. We very much hope our actions are sufficient.

1 *There is a need to provide stronger evidence that activities have taken place. Examples of the types of evidence that could be provided are included in the review text.*

The additional types of evidence requested have been included in the supplementary materials for this annual report.

Darwin Annual Report Template 2021

2 *Attribution of achievements that result from the Darwin Funding is likely to be complex and the Darwin contribution difficult to disentangle from the wider programme. The project currently struggles with this particularly in relation to reporting the poverty and gender benefits of the Darwin support versus the benefits of the wider programme. The project needs to be clearer on direct and indirect contributions from the Darwin support.*

This has been addressed throughout this report. While Darwin does not directly fund REDD+ management activities, the Darwin funded activities are absolutely integral to the success of the REDD+ projects they are supporting i.e. without the Darwin funded activities, the REDD+ activities would be unlikely to succeed. However, we have tried to be clear about which aspects reported on are directly attributable to Darwin funded activities, and which are indirectly attributable.

3 *From the AR1 it is less clear how the Lion Carbon and WildCRU partnerships function and are managed. Whilst there is nothing to suggest there are any problems with these partnerships, it would be useful to understand how these partnerships work. This could be elaborated for the next report.*

More information about how the partnership between Lion Carbon and WildCRU functions has been given in section 2 of this report. We hope this is now clear.

4 *Whilst project monitoring and reporting of progress against the logframe in the text of the report and in Annex 1 Logframe progress table is good, the project seems confused about what is understood to be project M&E. The M&E section of the AR1, and the budget component on M&E describes the biodiversity and social monitoring interventions of the project, rather than what is required here: the M&E the project uses for the purpose of managing, reviewing and reporting the progress of the Darwin funded activities.*

The M&E plan for this project has been reviewed on the basis of this feedback and the full plan has now been included with this report - Annex 26 in the supplementary materials. We believe these measures are capable of managing, reviewing and reporting the progress of the Darwin funded activities. We hope the reviewer agrees.

11.   Other comments on progress not covered elsewhere

The main risk this project faces is a political one related to the REDD+ projects that these Darwin funded activities are integral to. Currently the ownership of the carbon rights rests with the communities, meaning that it is possible to get the finances raised through the sale of REDD+ carbon offsets directly to the communities that are responsible for the management of natural resources. Reduction in poverty and sustainable development in these communities is critical to biodiversity conservation, and any weakening in the connection between biodiversity conservation and meaningful community benefits could severely impact on this project's ability to achieve its stated Outcome and Impact. Change in carbon rights has not happened but it is a threat, particularly as this project succeeds in demonstrating the full income generation potential that a well run REDD+ project can have.

12.   Sustainability and legacy

The Lion Carbon work is focused on a 30+ year time frame. The biodiversity conservation elements that are directly funded by this Darwin project are therefore designed to be sustainable over the long-term. Biodiversity Monitoring methods are cost-effective over large land areas, so they can be expanded and repeated alongside the REDD+ community enterprise. Likewise, the biodiversity security elements are embedded in the community institutions that are mandated to manage natural resources (the CRB/CFMGs). Even without the REDD+ enterprise partnership, the systems and knowhow created by the Darwin funded activities remain valid and appropriate. The real value of the Lion Carbon project, however, is that all the Darwin funded activities are underpinned by the creation of a new biodiversity conservation linked income stream - the REDD+ projects - which is gradually providing the income to cover the costs of the Darwin funded activities, as well as make biodiversity

conservation meaningfully valuable to local communities. The latter is key because prior to REDD+, wildlife was worth more to local communities dead (bushmeat) and trees were worth more cut down (firewood and timber). Without income from REDD+, funding would need to be found elsewhere, either from donors or from government, to incentivise and enable the Darwin funded activities.

As already outlined in earlier sections, the REDD+ enterprise, of which the Darwin funded activities form an integral part, is key to this project's sustainability and legacy. BCP has made a concerted effort to ramp up social media and the frequency of E-Newsletters and Blog posts by scheduling a new blog post/E-newsletter every 15 days. This is a marketing effort to create awareness and drive carbon offset sales in order to better achieve the outcome of supporting Lion Carbon costs by 2022.

BCP has made every effort to increase lines of communication with its stakeholders to keep all parties engaged and aware of BCP's activities. These are in the form of regular letters to government wildlife and forestry departments (DNPW and FD) as well as sharing monthly memos with CRB/CFMGs to update them on any developments from the project partners side.

The nature of BCP's organizational structure shows a strong importance placed on community engagement. The Project Manager supervises a Sector Manager and the Sector Manager supervises a Site Operations Manager who supervises a team of Chiefdom Leads and their "Second in Commands". The structure of this support team is replicated within each Project, sector and Chiefdom to ensure there are always strong links between community members and the BCP management support, personnel to engage and hear community members, as well as understand and quickly resolve any grievances.

The planned exit strategy in our original Darwin proposal is still valid. As per the application, all conservation activities (conservation planning, anti-poaching and monitoring) are still embedded in the company's REDD+ operations. 30-year agreements have been signed with local communities to ensure long-term, sustainable change and to ensure that this project is embedded in our company operations as a going concern. Our Luangwa Community Forests Project was verified during November 2019 which allows us to legally sell carbon offsets from the largest REDD+ project in Africa covering just over 940,000 hectares. Due to COVID-19, the next 2 years will be a huge test of project resilience and sustainability, which will hopefully demonstrate the importance of REDD+ in increasing the resilience of vulnerable communities and their natural resources to global disasters like COVID-19. Please see section 11 for related COVID-19 concerns.

13.   Darwin identity

The Darwin Initiative is acknowledged on both partner organisation websites, which includes the logo, a brief description of their work and a link to the website - https://biocarbonpartners.com/about/partners/; https://www.lionlandscapes.org/sponsors; https://www.lionlandscapes.org/lioncarbon

BCP - Social media posts to Facebook and Instagram:

https://web.facebook.com/BioCarbonPartners/posts/3663105650373449
https://web.facebook.com/BioCarbonPartners/posts/4078378505512826
https://web.facebook.com/BioCarbonPartners/posts/4213008332049842
https://web.facebook.com/BioCarbonPartners/posts/4414478535236153)
https://web.facebook.com/BioCarbonPartners/posts/4591358650881473)

BCP - Blog posts:

Blogpost entitled '50 New BCP Supported Community Scouts to join the REDD+ Team" - http://blog.biocarbonpartners.com/50-new-community-scouts-join-the-redd-team/

Blogpost entitled 'Roan Population Increases for The First Time in 10 Years In Rufunsa', in which we celebrate the correlation between zero encroachment in LZRP to improved livelihoods and a return of wildlife in the area (captured through the camera) traps -

http://blog.biocarbonpartners.com/roan-population-increases-for-the-first-time-in-10-years-in-rufunsa/

A link to our Impact Report where we thank the Darwin Initiative in the acknowledgements section and under BCP supported Community Scouts http://blog.biocarbonpartners.com/the-bcp-impact-report-2020-welcome-to-our-journey/

Lion Landscapes - Facebook (also posted on Twitter and Instagram):

https://www.facebook.com/lionlandscapes/photos/a.1862180160737065/2971798476441889/
https://www.facebook.com/lionlandscapes/photos/a.1862180160737065/2974487106173026/
https://www.facebook.com/lionlandscapes/photos/a.1862180160737065/2962228347398902/
https://www.facebook.com/lionlandscapes/photos/a.1862180160737065/2956949534593450/
https://www.facebook.com/lionlandscapes/photos/a.1862180160737065/2951916658430071/
https://www.facebook.com/lionlandscapes/photos/a.1862180160737065/2946967292258341/
https://www.facebook.com/lionlandscapes/photos/a.1862180160737065/2941934632761607/
https://www.facebook.com/lionlandscapes/photos/a.1862180160737065/2936846176603786/
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https://www.facebook.com/lionlandscapes/photos/a.1862180160737065/2971798476441889/?type=3

LL - Facebook (reshare BCP post mentioning Darwin Initiative):
https://www.facebook.com/lionlandscapes/posts/2991968494424887
https://www.facebook.com/lionlandscapes/posts/2931609263794144

LL - Blogposts showing Darwin Initiative Logo: https://www.lionlandscapes.org/post/earth-day-lion-carbon-q-a

Darwin is also included on the front page of the Biodiversity Monitoring Plan and Annual Reports.

14.   Impact of COVID-19 on project delivery

The main impact of Covid-19 on project activities has been the postponement or delay in the implementation of some programmatic elements during the initial months of the pandemic e.g. scouts training and monthly partners' meetings. As the world adapted to living with sars-cov-2, planned programs such as training were undertaken but at higher costs in an effort to ensure adherence to health guidelines. Meetings have also cost more as they have had to be undertaken with multiple smaller groups, as opposed to one or two large groups, which was a more efficient use of both time and resources. Unfortunately, due to the nature of the project area, virtual meetings with groups such as VAGs and CRB/CFMGs are not a real option as most of them do not have access to the internet and in some instances gadgets such as computers and smartphones.

Covid-19 has also meant previously unforeseen financial and logistical limitations in other aspects of the work. Partner resources were used to provide communities with the essentials they needed to protect themselves from Covid-19 e.g. BCP delivered hand-washing soaps and water containers to 1,200 households. The planned expansion of biodiversity monitoring over new areas was postponed to the next reporting period due to the challenge of getting enough external partner consensus to work in new areas and carry out all the related meetings that would have been needed. We believe that this was understandable, and even sensible, at a time when people and organisations were being extra cautious and unwilling to take on new activities. Biodiversity monitoring efforts were expanded through adding the camera trap surveys to the existing sampling area. This increased the depth and quality of data collected but not the geographic area. However, this is changing and we have secured the necessary local partners on the ground to expand survey activities geographically during the first part of the next reporting period.

Overall, Covid-19 has provided proof of the resilience of this project. While many projects and organisations have stopped or drastically reduced activities during the pandemic, relatively short delays in programmatic activities, and absorbable financial restrictions have been the main challenges faced by this project, such that almost all proposed targets are still being met. Covid-19 has dramatically demonstrated the importance of diverse income streams supporting the conservation of biodiversity in many landscapes. Tourism and philanthropy were the only sources of income supporting local community development and conservation activities in the project area prior to REDD+. Tourism completely crashed and philanthropy has been negatively impacted by the global economic crisis during Covid-19. Had project activities been reliant on tourism, then all benefits for local communities related to the conservation of biodiversity would have ceased, and communities would have been forced to be even more dependent on the unsustainable use of natural resources than they were before; something that has come to pass in many important wildlife areas. Darwin funded Lion Carbon activities, and the REDD+ projects they enable, have ensured that sustainable community development and natural resource management has continued to move in the right direction, even during a global crisis.

15.   Safeguarding

Please tick this box if any safeguarding or human rights violations have occurred during this financial year.   ☐

If you have ticked the box, please ensure these are reported to ODA.safeguarding@defra.gov.uk as indicated in the T&Cs.

All the field work for this project is carried out by BCP staff with only one field staff member employed by LL. BCP safeguarding and FPIC information is all contained within the FPIC Manual (Appendix 29) and Human Resources Manual (Appendix 30) supplied in the supplementary materials.

16.   Project expenditure

- **Table 1: Project expenditure during the reporting period (1 April 2020 – 31 March 2021)**

Project spend (indicative) since last annual report	2020/21 Grant (£)	2020/21 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)				
Consultancy costs				
Overhead Costs				

Travel and subsistence	
Operating Costs	
Capital items (see below)	
Monitoring & Evaluation (M&E)	
Others (see below)	
TOTAL	

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2020-2021

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
Impact A landscape where local communities sufficiently benefit from viable populations of wildlife and healthy habitat to ensure the long-term recovery and survival of wildlife and standing forests		Due to Covid-19, it has been a tough year for conservation as tourism and philanthropic funding have declined. However, through the sale of carbon offsets, the equitable sharing of benefits from the conservation of biodiversity were made from this project, through direct payments of Forest Carbon fees to the VAGs via the CRB/CFMGs for the outstanding performance in forest management. http://langmead.com/media/?p=627	████████████████████
Outcome A scalable and sustainable biodiversity conservation model that increases the value of biodiversity to local communities and develops local and regional capacity for the sustainable management of natural resources.	0.1. All activities relevant to ongoing CRB/CFMG functioning and adaptive biodiversity management (excluding the community camera trapping pilot, which is not yet tested) in the phase 1 project area 100% funded by the sale of REDD+ carbon offsets by 2022. 0.2. Agreed plans to expand the outputs listed below across Phase 2 of the REDD+ managed area (Fig.1) by project end. 0.3. 52,000 community beneficiaries from REDD+ carbon investment into honey production, conservation agriculture, other farming support, clean water and health in the phase 1 project area by project end.		
Output 1. Appropriate and adaptive resource management planning at the	1.1. Four (quarterly) CRB/CFMG led conservation planning review meetings	2021 annual work plans from CRB/CFMGs have been received, reviewed and approved with the first 50% of Carbon funding disbursed to the CRB/CFMGs. The	

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Community Resource Board/Forest Management Group (CRB/CFMG) level in all phase 1 project General Management Areas (GMAs).	for each GMA (3) in the phase one project area by project end. During which, performance of the CRB/CFMG and BCP are reviewed against CRB/CFMG Annual Work Plans.	work plans include various activities such as fire management, construction of community development projects such as health centers and schools as well as management of community scouts and natural resources.
Activity 1.1 Hold quarterly CRB/CFMG led conservation planning review meetings for each GMA (3) in the phase one project area. During which, performance of the CRB/CFMG and BCP are reviewed against CRB/CFMG Annual Work Plans and Community Forest Management Agreements.	Quarterly planning meetings were held and one major outcome of the meeting was the finalised 2021 CRB/CFMG work plan and budget. These are attached as part of supporting documents.	Within the upcoming reporting period monitoring and tracking of work plan implementation will be undertaken.
Output 2. A Biodiversity Monitoring Plan, capable of informing a process of adaptive biodiversity management, embedded in CRB/CFMG Annual Work Plans in the phase 1 project area.	2.1. A scientifically robust, logistically feasible and cost-effective Biodiversity Monitoring plan, that includes wildlife, produced by LL and signed-off by BCP and CRB/CFMGs by the end of the first quarter. Baseline - biodiversity monitoring plans for the phase 1 project area currently only include the habitat monitoring necessary for the verification of REDD+ carbon offsets. 2.2. Two years of publishable data recorded, analysed and published, capable of showing trends in wildlife and illegal activity, density and distribution, across the phase 1 sampling areas by project end. Baseline - there are no consistent publishable wildlife monitoring data across the phase 1 project area.	Progress towards this output was good during this reporting period. A plan has been produced and was implemented during this reporting period. The only part of the planned activities that was adjusted was the geographic expansion of all formal survey methods into new survey areas was postponed until the next reporting period due to Covid-19. The Biodiversity Monitoring Plan and related activities produced good quality publishable data during the reporting period, and this data was analysed and results fed back to land managers.
Activity 2.1. Design, agree with stakeholders and publish detailed biodiversity monitoring methods, protocols, and sampling framework for the phase 1 project area.	This activity was completed in year 1	The Biodiversity Monitoring plan was reviewed again this year and will be reviewed annually during Q3 - after the analysis of that year's survey and SMART data, and before the AGM with the CRB/CFMGs in January to develop the CRB/CFMG Annual Work Plans for that year. We have to maintain a degree of flexibility with survey dates depending on resource availability and weather etc but the period for each

			survey was agreed for the coming year.
Activity 2.2. Purchase all biodiversity monitoring equipment required as outlined in the biodiversity monitoring methods and protocols in 2.1.		This activity is complete.	More equipment was purchased this year as required to replace broken or stolen equipment. Also to fill gaps found in equipment needed during the surveys run.
Activity 2.3. Carry out initial biodiversity monitoring (BM) training for 100 scouts and 3 managers in year 1. Biodiversity monitoring will form part of the in-service training all scouts will receive annually (see 3.2.).		This activity was completed but slightly differently to originally proposed. As described in our last annual report, specialist units of scouts were chosen and trained to carry out the formal BM surveys (as described in section 3.1 of this report). These scouts are trained immediately before every survey rather than annually. All community scouts have been trained in the use of SMART, and have begun collecting SMART data to contribute to BM (section 3.1).	BM scouts will continue to receive training before every survey, and SMART data collection All scouts will receive monthly review/feedback on the SMART data collected. (see rows below).
Activity 2.4. Complete 1 year 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.		This activity was completed for this reporting period, as per the Biodiversity Monitoring Plan (see supplementary materials)	This activity will be repeated during the next reporting period over an expanded area.
Activity 2.5. Analyse survey data annually and report results back to all stakeholders in project areas in annual reports (and during the final project stakeholder workshop 1.5. above).		All data up to the end of 2020 was analysed and reported on, with the exception of the camera trap data, and the Biodiversity Monitoring Annual Report 2020 (in the supplementary materials) was produced. Because this survey was later than planned, due to delays with cameras being released from customs, camera data processing and analysis was not possible for this report but will be included in the next.	This activity will be repeated each year in Q3 (Oct-Dec). Camera trap surveys will be run earlier during 2021 and subsequent years, to allow analysis of the camera trap data from that year to be completed in time to be included in the annual report.
Output 3. Increased capacity of Community Resource Board to implement their Annual Work Plans	3.1. 30 new CRB/CFMG scouts employed, provided with a minimum of 3 months training, equipped for	The Capacity of the CRB/CFMGs to carry out their Annual Work Plans was increased by an additional 50 scouts having undergone full training during this reporting period, 34 of whom were male and 16 female. These scouts graduated	

and reduce the main threats to biodiversity (bushmeat poaching and deforestation) across the phase 1 project area.	purpose, and managed in a coordinated way in the phase 1 project area by project end. Number of CRB/CFMG scouts at project start is 37. 3.2. Number of patrol days/mth increased by 60% in project areas by the end of project date, from a baseline revealed during the first CRB/CFMG Annual Work Plan development process. 3.3. A 30% decline in the number of bushmeat poaching incidents recorded per patrol day in all project areas by the project end. Baseline to be established at the end of the first year. 3.4. A 30% decrease in the rate of deforestation in project areas at the project end date. Baseline will be the deforestation rate accepted during the carbon verification process, now underway.	in November 2020 and have since been equipped and joined the team of existing community scouts patrolling the REDD zones. http://blog.biocarbonpartners.com/2020/11/. This puts the number of scouts at 105, from the baseline of 37, ahead of the projected goals for this project. Additionally, data recorded by scouts has been improved during this reporting period by the addition of SMART mobile. SMART Mobile is a leading solution for capturing scouts' patrol data in protected areas. SMART Mobile makes it possible for scouts to easily, accurately and quickly collect and upload patrol data for reporting, analysis and action. This means CRB/CFMGs will be able to accurately measure the patrol days, locations and distances, as well as other key metrics such as illegal activity incidents.
Activity 3.1. Provide basic training for 30 new CRB/CFMG scouts in year 1 and 30 further new CRB/CFMG scouts during year 2. Basic training is a 3-month approved curriculum course run with the Zambian Department of Parks and Wildlife.	50 new scouts trained	Recruitment of additional scouts planned to achieve conservation days target.
Activity 3.2. Provide in-service training for 60 CRB/CFMG scouts and 40 partner organisation scouts in year 1 and 90 CRB/CFMG scouts and 40 partner organisation scouts in year 2. 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.	In service training done for 48 scouts	Training for the remaining 12 yet to be done but ear-marked for 2021. Training had to be done in smaller groups to ensure adherence to COVID guidelines.
Activity 3.3. Provide additional equipment revealed as necessary during the recent CRB/CFMG Annual Work Plan development process for all scouts (3.1.).	All equipment has been procured and well over 60% distributed	Equipment delivery to be complete by the end of August 2021.
Activity 3.4. Provide the required management support for anti-poaching activities in phase 1 project areas revealed in the recent CRB/CFMG Annual Work Plan development process.	Community scout anti-poaching activities are managed from the operations room at the Mfuwe office. Based on information received from communities and information gathered	This process will be continued in the following period.

		by BCP flights, anti-poaching teams are issued with specific "task orders" prior to a patrol, allowing for a targeted approach to the anti-poaching operations.	
Activity 3.5. Review and improve the SMART model for data collection by scouts.		SMART training done and system in use	This process will be continued in the following period.
Activity 3.6. Review SMART patrol data and produce a quarterly report on scout activities to review during the quarterly meeting with CRB/CFMGs.		Patrol data is reviewed monthly by the conservation and deployment team and is also shared with the CRB/CFMGs.	This process will be continued in the following period.
Output 4. Linkage between payments from the sale of REDD+ offsets and wildlife conservation performance is strengthened for local communities	4.1. A 50% increase in the number of participants in the community camera trapping pilot who link benefits received from the sale of REDD+ carbon offsets with the conservation of wildlife and forests by the project end date. Baseline determined in pre-pilot surveys.	Post-pilot surveys for one village will be completed in June & July 2021 following the maize harvest and in September & October 2021 for the second village. We will then be able to see if this pilot was successful at improving the linkage between benefits received from the sale of REDD+ carbon offsets and the conservation of wildlife and forests. Baseline values from pre-pilot surveys: January village complex (JAZ): 0 reference to BCP or carbon offset sales (n=33). Chalubilo village complex: 1 direct BCP reference (n=35)	
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.		This activity was completed during this reporting period (survey form in the supplementary materials)	Surveys will be repeated again at the end of the pilot (next reporting period).
Activity 4.2. Secure agreements with two villages, inside the project phase 1 area, for a community camera trapping pilot.		This activity was completed during this reporting period (copy of an agreement in the supplementary materials)	Agreements may be modified at the end of the project pilot after the overall pilot has been assessed.
Activity 4.3. Select village representatives to manage cameras and deploy cameras for community camera trapping pilot.		This activity was completed during this reporting period for one village but the other village did not select a representative and so the field manager for this project oversaw the deployment of cameras.	No further action required.

| Activity 4.4. Review camera trap data with participant village representatives monthly. | This activity was completed for the time covered by this reporting period (record of points and related benefits awarded in the supplementary materials) . | This activity will continue over the next reporting period and final meeting will be held with the participating villages to review the pilot and gather feedback on if the community found the programme beneficial, and if yes then how the programme would need to be changed/improved belore continuation and roll-out. |

- ● **Annex 2: Project's full current logframe as presented in the application form (unless changes have been agreed)**

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Impact: A landscape where local communities sufficiently benefit from viable populations of wildlife and healthy habitat to ensure the long-term recovery and survival of wildlife and standing forests. .			
Outcome: A scalable and sustainable biodiversity conservation model that increases the value of biodiversity to local communities and develops local and regional capacity for the sustainable management of natural resources.	0.1. All activities relevant to ongoing CRB/CFMG functioning and adaptive biodiversity management (excluding the community camera trapping pilot, which is not yet tested) in the phase 1 project area 100% funded by the sale of REDD+ carbon offsets by 2022. 0.2. Agreed plans to expand the outputs listed below across Phase 2 of the REDD+ managed area (Fig.1) by project end. 0.3. 52,000 community beneficiaries from REDD+ carbon investment into honey production, conservation agriculture, other farming support, clean water and health in the phase 1 project area by project end.	0.1, BCP accounts and project budget 0.2. Minutes of the BCP AGM and agreed plans for Phase 2. 0.3. Pre-project and post project interviews conducted with community members living inside Lion Carbon areas.	● Wildlife conservation will remain an important goal for BioCarbon Partners after this project period. ● Current Ministry of Justice Approved Memorandum of Understanding with the Department of National Parks and Wildlife (DNPW) and the Forestry Department to implement REDD+ in project areas, and work with Community Resource Boards on enforcement is not revoked. ● Current projected income (timeframe and amounts) from the sale of REDD+ carbon is realistic.
Output 1. Appropriate and adaptive resource management planning at the Community Resource Board/Forest Management Group (CRB/CFMG) level in all phase 1 project General Management Areas (GMAs).	1.1. Eight (quarterly) CRB/CFMG led conservation planning review meetings for each GMA (3) in the phase one project area by project end. During which, performance of the CRB/CFMG and BCP are reviewed against Chiefdom Conservation Plans.	1.1 Chiefdom Conservation Plan documents. 2.2. Minutes of the quarterly CRB/CFMG review meetings..	● Current Ministry of Justice Approved Memorandum of Understanding with the Department of National Parks and Wildlife (DNPW) and the Forestry Department to implement REDD+ in project areas, and work with Community Resource Boards on enforcement is not revoked.
Output 2. A biodiversity monitoring plan, capable of informing a process of adaptive biodiversity management, embedded in Chiefdom Conservation	2.1. A scientifically robust, logistically feasible and cost-effective biodiversity monitoring plan, that includes wildlife, produced by LL and signed-off by BCP	2.1.. Biodiversity monitoring plan document. 2.2. Results from the annual analysis of all biodiversity monitoring data.	● The theft/destruction of cameras can be kept within workable limits – only important for the camera trap surveys.

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Management Plans in the phase 1 project area.	and CRB/CFMGs by the end of the first quarter. Baseline - biodiversity monitoring plans for the phase 1 project area currently only include the habitat monitoring necessary for the verification of REDD+ carbon offsets. 2.2. Two years of a publishable data recorded, analysed and published, capable of showing trends in wildlife and illegal activity, density and distribution, across the phase 1 sampling areas by project end. Baseline - there are no consistent publishable wildlife monitoring data across the phase 1 project area. 2.3. Chiefdom Conservation Plans adjusted to include agreed biodiversity monitoring plan by the project end.	2.3. Chiefdom Conservation Plans.	● Road penetration of the project areas makes a defensible sampling of project areas logistically feasible. ● The biodiversity monitoring plan developed in this project is embedded in all long-term Chiefdom Conservation Plans.
Output 3. Increased capacity of Community Resource Board to implement their biodiversity management plans and reduce the main threats to biodiversity (bushmeat poaching and deforestation) across the phase 1 project area.	3.1. 60 new CRB/CFMG scouts employed, provided with a minimum of 3 months training, equipped for purpose and managed in a coordinated way in the phase 1 project area by project end. Number of CRB/CFMG scouts at project start is 37. 3.2. Number of patrol days/mth increased by 60% in project areas by the end of project date, from a baseline revealed during the Chiefdom Conservation Plan development process. 3.3. A 30% decline in the number of bushmeat poaching incidents recorded per patrol day in all project areas by the project end. Baseline to be established at the end of the first year. 3.4. A 30% decrease in the rate of deforestation in project areas at the project end date. Baseline will be the deforestation rate accepted during the carbon verification process, now underway.	3.1. BCP and CRB/CFMG employment records. 3.2. Scout training records 3.3.SMART data collected on patrols by scouts. 3.4. Biannual biodiversity monitoring data generated during the life of the project and Scout patrol data recorded on SMART. 3.5. GIS data and analyses done as part of the monitoring required for the carbon verification process.	● Current Ministry of Justice Approved Memorandum of Understanding with the Department of National Parks and Wildlife (DNPW) and the Forestry Department to implement REDD+ in project areas, and work with Community Resource Boards on enforcement is not revoked. ● A larger number of scouts, and better training, equipment and management for those scouts, will result in reduced poaching and deforestation. ● Trends in bushmeat poaching and deforestation are detectable during the life of the project.

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Output 4. Linkage between payments from the sale of REDD+ offsets and wildlife conservation performance is strengthened for local communities.	4.1. A 50% increase in the number of participants in the community camera trapping pilot who link benefits received from the sale of REDD+ carbon offsets with the conservation of wildlife and forests by the project end date. Baseline determined in pre-pilot surveys.	4.1. Pre and post project survey data from interviews conducted with community members living inside Lion Carbon areas.	● The theft/destruction of cameras used for community camera trapping can be kept within workable limits. ● Allowing villages to monitor their own wildlife in their village area, and have some of the benefits received from the sale of REDD+ offsets linked to the results of that monitoring, leads to a stronger connection between wildlife conservation and benefits, and ultimately reduces poaching of wildlife.

Activities.

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

1.2. Hold an end of project stakeholder workshop to review progress of project activities and adapt the Chiefdom Conservation plans in each project area, in the light of feedback from users, biodiversity monitoring data and performance against project indicators.

2.1. Design, agree with stakeholders and publish detailed biodiversity monitoring methods, protocols, and sampling framework for the phase 1 project area.

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

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.).

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.

2.5. Analyse survey data annually and report results back to all stakeholders in project areas in annual reports (and during the final project stakeholder workshop 1.5. above).

3.1. Provide basic training for 30 new CRB/CFMG scouts in year 1 and 30 further new CRB/CFMG scouts during year 2. Basic training is a 3-month approved curriculum course run with the Zambian Department of Parks and Wildlife.

3.2. Provide in-service training for 60 CRB/CFMG scouts and 40 partner organisation scouts in year 1 and 90 CRB/CFMG scouts and 40 partner organisation scouts in year 2. 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.

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

3.4. Provide the required management support for anti-poaching activities in phase 1 project areas revealed in the recent Chiefdom Conservation Plan development process.

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

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

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.

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

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

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

4.5. Repeat social surveys (4.1.) to provide a measure of the change in value standing forests and living wildlife has for local communities in year 3 and the impact community camera trapping on that.

4.6. Review camera trapping pilot with a view to expanding the activity if successful.

● Annex 3: Standard Measures

▪ **Table 1**   **Project Standard Output Measures**

Code No.	Description	Gender of people (if relevant)	Nationality of people (if relevant)	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
6A/6B	Initial 3 month scout basic training course	Men and women	All Zambian citizens	32 scouts, 12 weeks	50 scouts, 12 weeks		82 scouts, 12 weeks	60 scouts, 12 weeks
	Scout refresher/ in-situ training.	Men and women	All Zambian citizens	32 scouts, 4 weeks	41 scous, 4 weeks		73 scouts, 4 weeks	130 scouts, 4 weeks
	Biodiversity monitoring training (including SMART training).	Men (75%) and women (25%)	All Zambian citizens	24, scouts, 8 days	82 scouts, 8 days		106 scouts, 8 days	130 scouts, 8 days
9	CRB/CFMG Annual Work Plans	N/A	N/A	3	3		6	3
	Community Forest Management Plans	N/A	N/A	3	0		3	3
10	Biodiversity monitoring plan and manual	N/A	N/A	1	0		1	1
12A	SMART database	N/A	N/A	1	1		1	1
	Biodiversity Monitoring Database	N/A	N/A	1	1		1	1
	Lion individual ID database	N/A	N/A	0	1		1	1
14A	Annual workshop with CRB/CFMGs, DPNW and FD for the development and agreement of Annual Work Plans	Men and women	Zambian	1	1		2	2
		Men and women	Zambian	10 (note these	10		20	10

	Quarterly CRB/CFMG meetings to monitor progress against Annual Work Plans			were in fact monthly in the first year)				
	Final project stakeholder workshop	Men and women	Zambian and international	0	0		0	1
22	Survey sampling frames (upwards of 180 squ. km. each frame) within the greater project area	N/A	N/A	2	2 expansion to 2 new survey areas, (total of 4) has been postponed to 2021-22 due to Covid-19.		2	4
23	All Co-funding raised for 2019-2021	N/A	N/A	■	■		■	■

- **Table 2   Publications**

Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)

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Darwin Annual Report Template 2021

● Checklist for submission

	Check
Is the report less than 10MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	Yes
Is your report more than 10MB? If so, please discuss with Darwin-Projects@ltsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	N/A
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Yes
Do you have hard copies of material you need to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	N/A
Have you involved your partners in preparation of the report and named the main contributors	Yes
Have you completed the Project Expenditure table fully?	Yes
Do not include claim forms or other communications with this report.	