

## Darwin Initiative Main and Post Project Annual Report

To be completed with reference to the “Writing a Darwin Report” guidance: (<http://www.darwininitiative.org.uk/resources-for-projects/reporting-forms>). It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

**Submission Deadline: 30<sup>th</sup> April 2019**

### Darwin Project Information

Project reference	25-011
Project title	Andean bears and people: coexistence through poverty reduction
Host country/ies	Bolivia
Lead organisation	Chester Zoo
Partner institution(s)	PROMETA
Darwin grant value	£266,625
Start/end dates of project	July, 1 <sup>st</sup> 2018 – March, 31 <sup>st</sup> 2021
Reporting period (e.g., Apr 2018 – Mar 2019) and number (e.g., Annual Report 1, 2, 3)	Annual report 1 (July 1 2018 – 31 Mar 2019)
Project Leader name	Alexandra Zimmermann
Project website/blog/Twitter	<a href="https://www.chesterzoo.org/conservation-and-science/where-we-work/latin-america/andean-bear-project">https://www.chesterzoo.org/conservation-and-science/where-we-work/latin-america/andean-bear-project</a>
Report author(s) and date	Ximena Velez-Liendo, Alexandra Zimmermann 30 April 2019

### 1. Project rationale

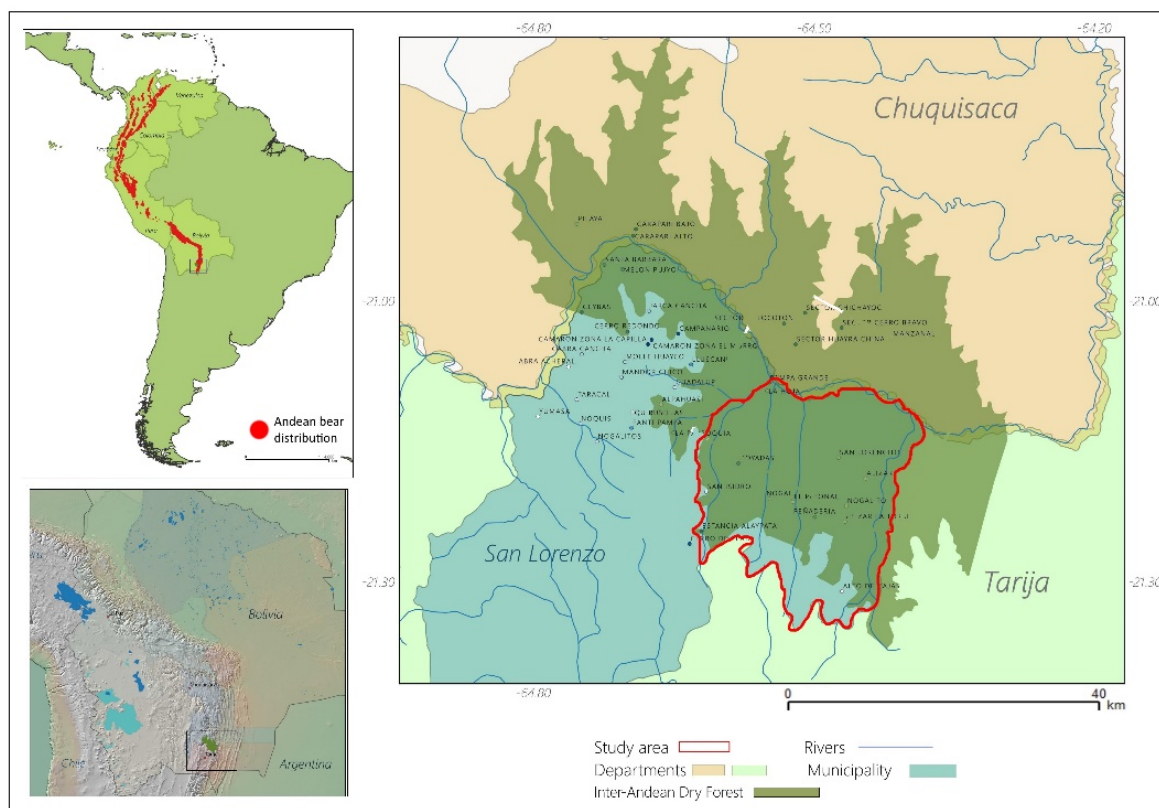
The inter-Andean dry forests of Bolivia are among the most fragmented, fragile and understudied ecosystems. They are highly prone to the effects of climate change, home to the threatened Andean bear, and also to some of the poorest and most vulnerable communities of Bolivia. In recent years severe droughts have affected agriculture, with crop losses of up to 80% in 2015. As a consequence people are increasingly changing their main economic activity from arable agriculture to livestock, which not only impacts on the natural regeneration of the dry forests and demands more land and water, but also increases encounters between people, bears and livestock.

In 2016, conservation scientists from Chester Zoo, PROMETA and WildCRU launched a pilot project to implement bear conflict mitigation and poverty alleviation strategies. This idea won a Whitley Award in 2017, enabling us to carry out a one year preliminary study focusing on a priority region of Tarija in the southern Bolivian Andes. Furthermore, the press generated by the award attracted full governmental support for a national Andean bear action plan, and the declaration of the species as Bolivian National Heritage.

This work has revealed that community attitudes towards bears are indeed very negative and that bears, and to a lesser extent pumas, are frequently blamed and retaliated against for livestock and crop losses, yet there is little empirical evidence to support individual claims, and

our initial population assessment suggests a low number of seasonally transient bears in the area. Life for the communities in these regions is, however, truly difficult and their attitudes and norms towards biodiversity conservation must be considered against this background of poverty, water shortage, limited infrastructure and few opportunities for income generation. This is where we see an opportunity to prompt a change, one in which development and conservation needs can be addressed together, for a more lasting, positive outcome.

Location: The project location encompasses the Inter-Andean dry forests of San Lorenzo, in Tarija Bolivia. In general terms, this area is characterized by mid-elevated mountains (1,200 and 3,500 masl); it is marked by hot, wet summers, and cool dry winters. Although much of the forest composition has changed due to human intervention, these valleys are considered important centres of endemism, and home of the largest carnivores in South America: the Andean bear, the jaguar and the puma.



Map 1. Study site showing its location in South America and Bolivia.

## 2. Project partnerships

Project partners include: PROMETA, IICA, CERDET and the Natural History Museum Alcides d'Orbigny in Bolivia, and WildCRU in the UK. PROMETA is Bolivia's second largest non-profit organisation that focuses on biodiversity conservation and sustainable development. The project concept and its theory of change were developed jointly with Chester Zoo through joint planning and field visits. PROMETA oversees the implementation of activities including recruitment and field team coordination. It is responsible for managing local finances, acquisition of materials, assistance with reports, and dissemination of outputs within Bolivia. Furthermore, communication with government authorities, the acquisition of permits, dissemination of project outputs and liaison with CBD focal point will also fall under PROMETA's responsibility. WildCRU guides the research, providing technical expertise in carnivore research and monitoring, as well as overall quality control, ensuring that research and M&E are carried out to the best standard. The Centre for Regional Studies of Tarija (CERDET) is a non-profit civil organization focused on socio-economic development at local and regional levels, and providing critical and specialized advice. The Farming Research and Training Institute (IICA) is a non-profit organization that promotes and facilitates collective processes in the political, social, educational and economic sector to rural communities of Tarija. IICA and CERDET will provide technical advice for capacity building

and livelihood improvement amongst participating households during the second year of the proposed project. Finally, the Natural History Museum Alcides d'Orbigny (NHM AdO) will support the research component by providing technical support in bear ecology, as well as training young biologists in bear monitoring, and community members as parabiologists.

### 3. Project progress

#### 3.1 Progress in carrying out project Activities

During year 1, project priorities were to establish a baseline of information about project communities (Activities 1.1, 1.2, 1.3, 2.1, 2.2, 3.1 under outputs 1, 2 and 3), generate evidence for bear and puma presence, and policy and governance (Activities 4.1, 4.2, 5.1, 5.2 under outputs 4, 5).

The assessment was conducted across seven communities, applying a livelihoods approach (human, social, natural, physical and financial). Given the small population size of the communities, and the similarities of their productive systems, a total of n = 64 interviews were collected, with interviewees selected at random to ensure the representativeness of the information obtained. Further discussions were held with seven focus groups.

The following activities for year 1 have been completed as part of outputs 1, 2 and 3.

##### Activity 1.1.

A participatory theory of change was constructed with four communities that have adopted beekeeping as an economic alternative. This was primarily achieved with the use of participatory maps due to the high level of illiteracy.

##### Activities 1.2, 1.3, and 3.1

Baseline qualitative and quantitative data were collected in seven communities. Results showed that all communities are in extreme poverty, as evidenced by a lack of basic necessities, high levels of illiteracy, and a significant number of people with disabilities. Community members' livelihoods are strongly dependant on economic resources generated through seasonal migration to Argentina for agricultural and livestock work.

Alternatives to keeping livestock, include fruit and vegetable production. However, water for irrigation is limited, as is road access. People also identified beekeeping as another alternative, due to the demand in local markets, little physical effort involved in production when compared with cattle ranching, and for being a year-round opportunity for income generation.



Photo 1. Theory of change, oral maps and discussions with focal groups.

## Activities 2.1 and 2.2

Beekeeping was identified by four communities as a suitable economic alternative. A total of 75 community members have been trained in this activity. In March 2019, the first beehive was harvested, showing a tangible result of this initiative.



*Photo 2. Beekeeping as an economic alternative. Top left: community members installing beehives. Top right: Dona Dora from Pajonalcito showing a honeycomb. Bottom left: community members from Pajonalcito extracting honey. Bottom right: honey.*

## Activities 4.1 and 4.2

Seventy-two camera traps have been installed, and eight bears identified, including a new bear cub photographed in early January. This would be the second cub photographed in two years.

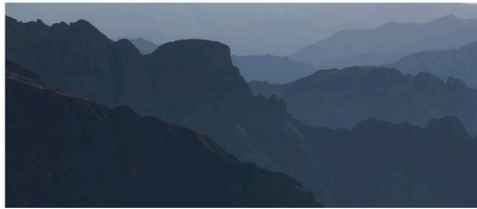
Training for seven parabiologists has been provided, and all parabiologists are now actively reviewing all camera stations with very little supervision.



**Bushnell** (c)AndeanBearProject DarwinInitiative-ChesterZoo-WildCRU-PROMETA-Jucumari 01-03-2019 08:38:48  
**Photo 3. Top: Four individuals identified by their facial marks. Bottom: New bear cub photographed.**

### Activity 5.1

Meetings were held with government authorities, resulting in two joint activities being proposed: 1. Monitoring cattle deaths caused by bears and other carnivores through calendars distributed to communities, and the national park service; and, 2. A regional assessment has been carried out in the Boliviano-Tucumano region (ecoregion identified as a priority for research and conservation), focussing on capacity building and human-bear conflict mitigation.



## CALENDARIO 2019 PARA EL REGISTRO DE ATAQUES A GANADO



### ¿Para qué sirve este calendario?

Este calendario nos sirve para saber CUANDO ocurre un ataque, CUANTO ganado (vacas, ovejas o chivas) es atacado y QUIEN mata al ganado. Con esa información podemos desarrollar medidas más eficaces para proteger al ganado.

### ¿Cómo llenar este calendario?

(1) Marque con una "X" el día que ocurrió el ataque.

2019 febrero

	dom	lun	mar	mié	jue	vie	sáb	dom
04 x Etorro oveja	05	06	07	08	09	10	11	12
13	14 x 4 vacas, el burro	15	16	17	18	19	20	21
22	23	24	25	26	27	28	29	30

(2) Escriba que tipo de ganado (vaca, chiva, oveja, burro o caballo) y la cantidad que fue atacada.

(3) Escriba el animal que usted cree causó el ataque.

Por ejemplo:

### 2019 enero

LINES	dom	lun	mar	mié	jue	vie	sáb	dom
01	02	03	04	05	06	07	08	09
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27
28	29	30	31	01	02	03	04	05



### Proyecto para la conservación del oso Andino

Con el objetivo de PROTEGER al oso Andino, su hábitat y a la gente, éste proyecto GENERA información sobre dónde y cuántos osos hay; TRABAJA con las comunidades para reducir pérdidas causadas por el oso o el puma, y DESARROLLA proyectos económicos alternativos a la ganadería.

Para más información dirijase a PROMETA, Calle Alejandro del Carpio entre Junin y O'connor N° 659, o llame al número 6645865.

@ConservacionCarnivorosAndinos

Con el apoyo de:



*Photo 4. Calendars distributed to communities and to the National Park Service.*

### 3.2 Progress towards project Outputs

Output 1: Livelihoods and wellbeing are improved among the project communities as a result of villagers adopting improved livestock management practices and developing supplementary livelihoods.

Seventy-five individuals from four communities (Pajonalcito, San Lorencito, Hoyadas and San Isidro) have been trained in beekeeping. These communities have received workshops on theory of change, and have built their change maps.

Baseline qualitative and quantitative data were collected in seven communities. Sixty-four interviews showed that a majority of villagers are illiterate, and there is a significant number of people with disabilities. Livelihoods are strongly dependant on economic resources generated through seasonal migration to Argentina for agricultural and livestock work.

Output 2: Capacity building and training helps communities improve resilience to environmental change, and fosters their ability to develop sustainable livelihoods independently.

Community consultations and training and mentoring events are planned for year 2. However, during the baseline assessment and theory of change workshops, people have indicated that they require capacity in beekeeping. Appropriate tools are being designed for the context of the communities (high level of illiteracy and disability).

Output 3: Safe coexistence of Andean bears, pumas and people in the project area is attained through a combination of reduced livestock losses, increased benefits from conservation and more wildlife-tolerant social norms.

Baseline information showed that the type of cattle ranching is in the project area extensive: animals graze in the mountains, drink water from rivers and springs, and do not have stables. Information on the amount of cattle in each community has been obtained from government agencies. This information will be used as an indicator of success of this intervention.

Output 4: Evidence base for bear and puma presence, movements, and habitat is generated, through participatory monitoring, and the physical and spatiotemporal aspects of human-bear conflict dynamics are better understood.

First phase camera trapping data has been collected. Andean bear individuals are identified. Training for new parabiologists has been completed.

Output 5: Policy and governance: the project catalyses effective collaboration among its partners, facilitating a co-owned effort between all stakeholders to implement Bolivia's Andean bear action plan

Meetings with government officials were held, and two main activities for the first year have been identified. Monitoring cattle-bear attacks through calendars distributed throughout the Andean bear's range, and assessment of capacities in the Boliviano-Tucumano ecoregion. Meetings have been scheduled approximately every three months.

### 3.3 Progress towards the project Outcome

#### Outcome:

The livelihoods of local communities and the conservation of Andean bears co-benefit from an integrated approach linking and improving livelihoods and co-existence with bears and pumas in the dry forests of the Pilaya watershed, Bolivia.

Indicators	Baseline	Source of evidence	Comments
0.1 Eight communities (up to 200 households) develop supplementary livelihoods to reduce poverty levels and increase wellbeing by end of yr 3	Four communities (75 people) have developed supplementary livelihoods (beekeeping). Other economic alternatives identified in the baseline study are lavender production (primarily focused to women)	Interviews, baseline assessment and theory of change maps.	

<p>0.2 Capacity, agency and confidence of at least 100 community members in Pilaya communities to adapt to socio-environmental change in their areas is improved by end of yr 3</p>	<p>Seventy-five people have been trained, and they are capable to continue beekeeping.</p>	<p>Training lists and reports</p>	
<p>0.3 Key beneficiary communities show positive changes in acceptance of bears, demonstrated by a 50% increase in tolerance by comparing baseline and final surveys by end of yr 3</p>	<p>No killing or harming of bears has been registered during this first year. In two communities (San Isidro and Hoyadas) fireworks have been used to scare off bears.</p>	<p>Quantitative and qualitative social research data collected during the pilot study, at baseline, and completion of project</p>	
<p>0.4 Understanding of distribution and ecological needs of Andean bears and pumas in inter-Andean dry forest are much improved as a result of the data collected and analysed by the project, including previous years data collected</p>	<p>Knowledge of Andean bear distribution in the study area is improved. Seasonal movements also have been registered, showing bear activity from October-May. Pumas on the other hand, have a permanent presence in the area, with attacks to livestock occurring all year round.</p>	<p>Photographs, identification of bear individuals, identification of pumas and other carnivores. Monitoring seasonal movements through camera-trap stations, as well as cattle.</p>	
<p>0.5 Implementation of the national action plan for Andean bears is underway in the project areas through a collaborative effort with government and communities, providing a model for other regions of Bolivia, and resulting in recognised legal protection for the bears and their habitat</p>	<p>National action plan for the Andean bear approved by the government, and at regional level (Tarija), the Andean bear has been declared a natural heritage species increasing its protection and supporting conservation initiatives</p>	<p>Progress reports, and agreements between government agencies and other organizations.</p>	
<p>1. <u>Livelihoods and wellbeing</u> are improved among the project communities as a result of villagers adopting improved livestock management practices and developing supplementary livelihoods.</p>			
<p>1.1 Process of participatory theory of change planning with project community members and project team completed by end yr 1</p>	<p>Sixty-four interviews in seven communities and seven focus groups were carried out to obtain a baseline of information. Theory of change workshops were carried out with the communities involved in beekeeping.</p>	<p>Baseline assessment and questionnaire surveys.</p>	
<p>1.2 Alternative livelihood</p>	<p>Alternatives were explored, with beekeeping and lavender identified as the most suitable</p>	<p>Baseline and monitoring</p>	



<p>opportunities explored with 4 communities (approx. 100 households) by end of yr 1, with market analysis conducted and report produced by project team/advisors</p> <p>1.3 Wellbeing and livelihoods (current and aspirations) discussed and defined with and by 4 communities by end of yr 1 using focus groups and one-to-one interviews</p> <p>1.4 30% of households in the 4 communities have taken up an alternative sustainable livelihood by end of yr 2</p> <p>1.5 Participating households' ability to generate income from alternative livelihoods has increased by 15% compared to baseline, by end yr 3</p>	<p>activities. Four communities have adopted beekeeping, and market analysis will be conducted in yr2.</p> <p>Seven focus groups and sixty-four interviews were held. Current wellbeing and livelihoods information is included in the theory of change maps.</p> <p>N/A</p> <p>N/A</p>	<p>wellbeing and social data collected via a combination of methods, including focus groups, social surveys, context and social inclusion analyses, and national indices</p>	
<p>2. <u>Capacity building and training</u> helps communities improve resilience to environmental changes and fosters their ability to develop sustainable livelihoods independently</p>			
<p>2.1 Community consultations on areas for training, based on initial feedback from above (1.1-1.3) completed in early yr 2.</p> <p>2.2 Training and mentoring events for alternative livelihoods carried out in 4 communities, reaching out to 100 households, by end of year 2</p> <p>2.3 50% of project households have at least one member who has attended the</p>	<p>Consultations have been in carried out seven communities as part of the baseline study.</p> <p>N/A</p> <p>N/A</p>	<p>Report on outcomes from consultations, training needs, and training events. Number of people attending training are included.</p>	

workshop events by end yr 2			
2.4 Feedback and learning review carried out with communities by yr 3 via stakeholder meetings in project areas	N/A		
<b>3. <u>Safe coexistence</u> of Andean bears, pumas and people in the project area is attained through a combination of reduced livestock losses, increased benefits from conservation and more wildlife-tolerant social norms.</b>			
3.1 Baseline study using social surveys and focus group discussions on perceptions, values and social norms carried out in the 8 communities by the project's experts by yr 1	Interviews in seven communities have showed there is little evidence of bear attacks on cattle and none on goats or sheep. Communities with the lowest income (San Isidro), and with highest levels of mental disabilities showed more negative attitudes towards bears than the rest of the communities.	Social data, baseline assessment and monitoring data through questionnaires collected.	
3.2 Improved livestock protection practices/husbandry identified and implemented among households by yr 2 by providing training and assistance with predator-proof enclosures, water pits and best practice livestock management	N/A		
3.3 80% of households in 4 communities report reduced predation on their livestock by yr 3	N/A		
3.4 Design of social marketing and/or behaviour change strategy to increase valuing and tolerance of bears in the project communities, end of yr 1	Social marketing workshop to be held during the first week of May.		
3.5 Implementation of social marketing strategy in yr 2 and measurable changes in behaviour observed, by yr 3	N/A		

<p>4. <u>Evidence base</u> for bear and puma presence, movements, and habitat is generated, through participatory monitoring, and the physical and spatiotemporal aspects of human-bear conflict dynamic are better understood.</p>			
<p>4.1 Bear and puma monitoring via camera trapping and observation by team conducted throughout project life cycle</p>	<p>Andean bear and puma's presence data has been collected since 2018 using camera traps.</p>	<p>Database with bear and other wildlife records constructed.</p>	
<p>4.2 At least eight community members, one in each community, recruited and trained as parabiologists to assist with bear research, in yr 1</p>	<p>Community members have been successfully trained.</p>	<p>Attendance records, photographs and certification of their training included.</p>	
<p>4.3 Community parabiologists and project team share research findings together, facilitating positive interest and engagement also with peers, children and authorities, yr 2-3</p>	<p>NA</p>	<p>Andean bear database.</p>	
<p>4.4 Camera data allow identification of individuals based on facial marks and other wildlife; analysis completed by yr 3</p>	<p>So far eight bear individuals have been identified and monitored. Seasonal movements have been confirmed.</p>		
<p>5. <u>Policy and governance</u>: the project catalyses effective collaboration among its partners, facilitating a co-owned effort between all stakeholders to implement Bolivia's Andean bear action plan.</p>			
<p>5.1 Joint workshop with government, project partners, and community representatives to plan implementation of the Andean bear action plan in the project region, yr 1</p>	<p>Meetings with government authorities have been carried out, and activities towards the implementation of the Andean bear action plan have been selected: monitoring bear (and puma)'s related cattle kills and a capacity assessment for the Boliviano-Tucumano ecoregion.</p>	<p>Documentation, notes and minutes from meetings produced.</p>	
<p>5.2 Working group to collaborate on oversight of the above, and regularly meet to review progress yr 2 and 3</p>	<p>Meetings have been scheduled.</p>		
<p>5.3 Project senior staff have regular bi-annual meetings with CBD</p>			

focal point and government authorities to review Andean bear protection and human wildlife conflict and work towards ensuring the protection of protected areas			
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### 3.4 Monitoring of assumptions

Indicators	Assumptions	Comments
0.1 - 0.5	<p>Communities are willing and able to participate in the project</p> <p>Government and communities' support for the project continues</p> <p>Communities are willing to work with project researchers to develop supplementary livelihoods</p> <p>Communities are willing and able to adapt to socio environmental changes in their areas</p> <p>No unforeseen extreme events cause further decrease in perceptions about bears and pumas</p> <p>Enough data on bears and pumas have been collected to be analysed yr 1</p> <p>Effective protection against hunting Andean bears in the project region (Dry forests) is enforced</p>	<p>All communities, except one, have been willing to engage and assist with project activities.</p> <p>Yes.</p> <p>Yes</p> <p>To date no cattle has been killed by a bear,</p> <p>Yes</p> <p>To date no bear has been killed.</p>
1.1 - 1.5	<p>Communities are willing and able to engage in participatory theory of change planning</p> <p>Communities are willing and able to adopt alternative livelihoods</p> <p>Various means of verification (surveys, reports, observation, focus groups) allow for triangulation of information to provide robust M&amp;E</p>	<p>Seven out of the eight targeted communities are willing to join the initiative.</p> <p>Four communities have already adopted beekeeping as alternative</p> <p>Yes.</p>

	<p>No major social, economic, political or environmental disaster to significantly impede project progress</p> <p>Through the adoption of new livelihoods human and economic wellbeing increases (measured via social surveys)</p>	<p>No social, economic, political or environment disaster occurred.</p> <p>Baseline information regarding income has been collected and it will be compared during the project to assess economic wellbeing.</p>
2.1 - 2.4	<p>Community members are interested in joining the project and the training offered, and work cooperatively with the project team</p> <p>Community members attend consultations and share openly their desires and aspirations</p> <p>Community members see value and interest in attending training workshops</p>	<p>Interest has been shown, but fewer women have joined the group due to lack of confidence and economic dependency to their husbands.</p> <p>Yes</p> <p>Yes</p>
3.1 - 3.5	<p>Communities are willing and able to engage in project activities</p> <p>Government partner agencies remain supportive of project activities</p> <p>Community members are willing to attend and participate in human behaviour changing activities</p> <p>Social marketing strategy brings about human behaviour change and raises public awareness that bears are not a threat to their livelihoods</p> <p>Valuing of and tolerance towards bears and pumas increases due to social marketing strategies and doesn't decrease</p>	<p>Yes</p> <p>Yes</p> <p>N/A</p>
4.1 - 4.4	<p>No more than 10% camera failure during the project</p> <p>Camera trap image quality generates sufficient database of individuals for recognition of facial markings</p> <p>Camera traps do not incur theft and vandalism</p>	

	<p>Communities, and community members allow camera traps to be set up on their land and support the project</p> <p>Interest in and uptake of parabiologist initiative and training opportunities (as has been done elsewhere in Bolivia) by community members</p>	
5.1 - 5.3	<p>No changes in government authorities or delays in meetings to confirm the actions this project will take in order to implement the Action Plan</p> <p>All multi-stakeholders contribute in the process, have buy-in and commitment to the Action Plan</p> <p>Government authorities continue to support the project and the Andean bear action plan</p> <p>Bolivian protected areas maintain protected status and have government support and enforcement</p>	<p>No changes in government officials.</p> <p>So far, government agencies and regional governments have shown commitment to the action plan.</p> <p>Yes</p> <p>Yes</p>

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

At the current stage of this project it is still too early to identify any impacts of project interventions on biodiversity and poverty alleviation. However, in January this year, one of our camera trap stations registered the presence of an Andean bear cub (~3month old) and its mother, which is a good indicator of bear population growth. In early April, the first honey harvest was carried out in the community of Pajonalcito, which was much earlier than expected. This was a great opportunity to see tangible results of beekeeping.

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

This project directly contributes to Bolivia's commitment to the Global Goals for Sustainable Development (SDG) by reducing poverty (SDG1) through improving the livelihoods of people in vulnerable situations affected by economic, social and environmental challenges, and strengthening capacities for climate change adaptation and impact reduction (SDG 13). So far, the project has successfully trained 75 people in four communities in beekeeping, an economic alternative to livestock. Our project will address SDG 15 by reducing bear hunting, poaching and strengthening conservation efforts to save the Andean bear. Research will be carried out to conserve the Andean bear and the dry forests by providing people with economic alternatives to activities that cause deforestation (SDG 15). The project has registered a record number of bear individuals through camera traps (eight), including two cubs since the beginning of the project, and not a single bear kill since 2017. This project strongly emphasises the full and effective participation and empowerment of women, not only by working extensively with women in the beneficiary communities, but also by providing capacity and leadership opportunities within the project team itself (SDG 5).

## **5. Project support to the Conventions, Treaties or Agreements**

This project directly contributes to Bolivia's commitment to the Convention on Biological Diversity (CBD) and to the Aichi targets. To date, the project has been addressing Articles 7 and 12, by carrying out high quality scientific research for the conservation of the Andean bear, a threatened species (IUCN Vulnerable) through camera-trap monitoring. The implementation of the National Conservation Action Plan is currently focused on carrying out research in the Boliviano-Tucumano ecoregion, and to monitor cattle kills caused by bears through calendars distributed to national parks and communities in the area (Strategic goal C, Target 12). The implementation of beekeeping initiatives in four communities has contributed to reducing pressures on dry forest ecosystems through the improvement of livestock management, and conservation agreements with communities (Strategic goal B, Target 7).

Research is carried out by experienced Bolivian and UK scientists, who will also maintain a training program for community members and promote and encourage research for the conservation of the Andean bear and its ecosystem (Article 12). Training programs for community members and park rangers have been carried out as part of the National Conservation Action Plan, and further training will be carried out in year 2. This initiative will raise awareness of the value of the bear and its ecosystem amongst people from the communities and beyond through social marketing, social media, and outreach activities (Strategic goal A, Target 1).

Capacity and leadership opportunities for women in the project team (SDG5) is achieved by having four women out of the six members of the team in Bolivia leading different parts of the project. Capacity is provided by improving practical skills (beekeeping) and postgraduate opportunities (PhD).

## **6. Project support to poverty alleviation**

The project targets communities with poverty levels above 90% (measured by a lack of basic necessities) within the San Lorenzo Municipality. Like many human-wildlife conflicts, human-bear conflict is only partly about bears or pumas damaging resources; it is more about the many-layered underlying issues of vulnerability to a changing and challenging world and making a living in multidimensional poverty.

Through our project, we expect to be able to support up to 200 households, benefitting from an integrated approach that addresses poverty, wellbeing, livestock predation, land-use and acceptance of bears in the study area. This leads to improved resilience to social and environmental change, linking together action for poverty and conservation and enabling the protection of Bolivia's new national heritage species.

Based on our scoping work, during the past years, the main economic activity in these communities has changed from agriculture to cattle ranching, which also increases negative attitudes towards bears and other carnivores. This project aims to reduce livestock dependency by implementing economic alternatives e.g. beekeeping. By providing economic alternatives to livestock, the project will build capacity amongst community members to carry out new activities that will improve their well-being, and consequently reduce human-bear conflict, and help restore bear habitat.

## **7. Project support to gender equality issues**

The project strongly promotes the participation of women in all activities. However, social background, economic dependency on their husbands and lack of confidence has resulted in only 21 of the 75 community members involved in beekeeping being women so far. However, the team has identified activities such as growing lavender as an activity that supports beekeeping, and can provide additional economic support to women in the study area.

## **8. Monitoring and evaluation**

The project uses the log frame to monitor progress. In addition, monthly reports and skype meetings with Chester Zoo and the project leader are carried out. The team has collected baseline information, interview surveys, stakeholder mapping and situation analysis. All social

data will be gender-disaggregated to assess, consider and adapt how we may achieve gender equality. Although some activities have started earlier than expected (i.e. beekeeping), data has been collected at the start of these activities by our socio-economist consultant in order to assess the impact of these activities.

We do not expect any change to the M&E plan. During year two, an M&E consultant will be hired to assist in the evaluation of the project.

## 9. Lessons learnt

Our main challenge during this first year was the interviews, both household and focus groups. Although questions were carefully tailored, a majority of our interviewees had some level of disability, thus, we had to either revise the questions or request support from the local teacher to help us carry out the interview.

Expectations from community members regarding beekeeping were very low, which limited participation in some of the training courses, requiring us to rearrange some events.

During the wet season (December – February), road access to the communities can be dangerous and sometimes impossible. Therefore, it is important to not schedule any important meeting those months.

Vehicle availability: Due to the host organization having a limited number of vehicles, there were occasions where we had to rent a car. This extra expense has affected our budget, but it is important to be aware of this need in case of an unforeseen event.

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

Not applicable.

## 11. Other comments on progress not covered elsewhere

## 12. Sustainability and legacy

Our strategy for reaching a stable and sustainable end point is through building capacity amongst community members in economic alternatives to livestock. Beekeeping has been adopted in four out of our eight target communities. In two communities, honey has been harvested with little help from our technicians. The following stage is to develop a business plan so they can decide how to commercialize the products and reduce the need for external financial support. Beehives and other material provided during this first stage of the project are properly used and kept in a secure place under inventory. Each community organizes its members so that each one has a role (check the beehives, feed the bees, clean the apiary, etc.)

## 13. Darwin identity

The project has credited Darwin Initiative funding in banners displayed at all training events, PowerPoint presentations, camera trap photographs, and in a presentation to the British Embassy in Bolivia. The Darwin Initiative logo has been displayed in all presentations and printed documents provided during our training events. Tweets were broadcast by Ximena Velez-Liendo and Alexandra Zimmermann using the Darwin Initiative hash tag. Field updates (primarily to highlight bear presence) were broadcast via Facebook. The project is recognized as a “Darwin” project with clear identity both in the field and among conservation oriented organizations.

## 14. Project expenditure

**Table 1: Project expenditure during the reporting period (1 April 2018 – 31 March 2019)**

Project spend (indicative) since last annual report	2018/19 Grant	2018/19	Variance %	Comments (please explain)
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	(£)	Total Darwin Costs (£)		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)				
<b>TOTAL</b>				

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2018-2019

Project summary	Measurable Indicators	Progress and Achievements April 2018 - March 2019	Actions required/planned for next period
<p><b>Impact</b></p> <p><b>Linking poverty reduction and biodiversity conservation improves the wellbeing of communities and the population of threatened Andean bears in a key region of its global range.</b></p>		<p>At this stage of the project, it is still too early to identify any impacts of project interventions on biodiversity and poverty alleviation. However, in January this year, one of our camera trap stations registered the presence of an Andean bear cub (~3month old) and its mother, which is a good indicator of bear population growth. In early April, the first honey harvest was carried out in the community of Pajonalcito, much earlier than expected. This was a great opportunity to see tangible results of beekeeping.</p>	
<p><b>Outcome</b> The livelihoods of local communities and the conservation of Andean bears co-benefit from an integrated approach linking and improving livelihoods and co-existence with bears and pumas in the dry forests of the Pilaya watershed, Bolivia.</p>	<p>0.1 Eight communities (up to 200 households) develop supplementary livelihoods to reduce levels of poverty and increase wellbeing by end of yr 3</p> <p>0.2 Capacity, agency and confidence of at least 100 community members in Pilaya communities to adapt to socio-environmental change in their areas is improved by end of yr 3</p> <p>0.3 Key beneficiary communities show positive changes in acceptance of bears, demonstrated by a 50% increase in tolerance by</p>	<p>0.1. Four communities (75 people) have adopted beekeeping as economic alternative.</p> <p>0.2. Seventy-five people have been trained in beekeeping</p> <p>0.3 Too early to report.</p>	

	<p>comparing baseline and final surveys by end of yr 3</p> <p>0.4 Understanding of distribution and ecological needs of Andean bears and pumas in inter-Andean dry forest are much improved as a result of the data collected and analysed by the project, including previous years data collected</p> <p>0.5 Implementation of the national action plan for Andean bears is underway in the project areas through a collaborative effort with government and communities, providing a model for other regions of Bolivia, resulting in recognised legal protection for the bears and their habitat</p>	<p>0.4 Andean bear distribution and seasonal movements have been registered.</p> <p>0.5 Actions for year 1 have been identified and agreed in meetings with government authorities, and future meetings are scheduled.</p>	
<p><b>Output 1. <u>Livelihoods and wellbeing</u></b> are improved among the project communities as a result of villagers adopting improved livestock management practices and developing supplementary livelihoods.</p>	<p>1.1 Process of participatory theory of change planning with project community members and project team completed by end yr 1</p> <p>1.2 Alternative livelihoods opportunities explored with 4 communities (approx. 100 households) by end yr 1, with market analysis conducted and report produced by project team/advisors</p> <p>1.3 Wellbeing and livelihoods (current and aspirations) discussed and defined with and by 4 communities by end yr 1 using focus groups and one to one interviews</p>	<p>1.1, 1.2, 1.3 Theory of change with community members have been carried out as planned with theory of change maps built for each community. Interviews and discussions with focal groups have been registered.</p> <p>1.4 Seventy-five members in four communities have accepted beekeeping as economic alternative.</p>	

	<p>1.4 30% of households in the 4 communities have taken up an alternative sustainable livelihood by end of yr 2</p> <p>1.5 Participating households' ability to generate income from alternative livelihoods has increased by 15% compared to baseline, by end yr 3</p>		
<b>1.1.</b> Participatory theory of change plans report completed with input from community members;		Completed for seven communities	
<b>1.2.</b> Baseline qualitative data collection completed (focus groups, semi-structured interviews) in project communities;		Completed for seven communities	Baseline data will be completed for a new community
<b>1.3</b> Baseline quantitative survey developed, piloted and administered in project communities;		Completed for seven communities	
<b>1.4.</b> Viable alternative livelihoods identified, and market assessment and other finance opportunities completed;		Alternatives have been identified, and applied in four communities.	
<b>1.5.</b> Alternative livelihood initiatives established in project communities with supported where necessary by SM campaign and continuing guidance for start-up households/groups provided in yr 2		N/A	
<b>Output 2.</b> <u>Capacity building and training</u> helps communities improve resilience to environmental change and fosters their ability to develop sustainable livelihoods independently.	<p>2.1 Community consultations on areas for training, based on initial feedback from above (1.1-1.3) completed in early yr 2.</p> <p>2.2 Training and mentoring events for alternative livelihoods carried out in 4 communities, reaching out to 100 households, by end of year 2</p> <p>2.3 50% of project households have at least one member who has attended the workshop events by end yr 2</p> <p>2.4 Feedback and learning review carried out with communities by yr 3</p>	<p>Consultations have been carried in out in four communities.</p> <p>Too early to report</p> <p>Too early to report</p> <p>Too early to report</p>	

	via stakeholder meetings in project areas	
<b>2.1</b> Interim report on areas for training completed;		Training has been completed in four communities
<b>2.2</b> Training schemes for alternatives/more efficient use practices developed and workshops held in project communities by end of yr 2;		Too early to report
<b>2.3.</b> Training workshop attendance records collated and produced documenting participation numbers;		Too early to report
<b>2.4</b> Schemes and practices monitored, reviewed (with communities) and adapted as necessary, training and information-sharing events, to which neighbouring communities are invited, held to encourage replication of ideas.		Too early to report
<b>Output 3. <u>Safe coexistence</u> of Andean bears, pumas and people in the project area is attained through a combination of reduced livestock losses, increased benefits from conservation and more wildlife-tolerant social norms.</b>	<p>3.1 Baseline study using social surveys and focus group discussions on perceptions, values and social norms carried out in the 8 communities by the project's experts by yr 1</p> <p>3.2 Improved livestock protection practices/husbandry identified and implemented among households by yr 2 by providing training and assistance with predator-proof enclosures, water pits and best practice livestock management</p> <p>3.3 80% of households in 4 communities report reduced predation on their livestock by yr 3</p> <p>3.4 Design of social marketing and/or behaviour change strategy to increase valuing and tolerance of bears in the project communities, end of yr 1</p> <p>3.5 Implementation of social marketing strategy in yr 2 and</p>	<p>Baseline data has been collected through interviews and focal groups.</p> <p>Too early to report</p> <p>Too early to report</p> <p>Will be carried out this May</p> <p>Too early to report</p>

	measurable changes in behaviour changes observed, by yr 3	
<b>3.1</b> Baseline qualitative data collection completed (focus groups, semi-structured interviews) in project communities;	Training has been completed in four communities	
<b>3.2</b> Improved livestock protection practices/husbandry rolled out, monitored, reviewed (with communities) and adapted as necessary;	Too early to report	
<b>3.3</b> Depredation rates monitored and recorded monthly leading to identification and viability assessed of livestock protection/husbandry with project communities;	Too early to report	
<b>3.4</b> Social marketing strategy developed, piloted and administered in project communities;	Too early to report	
<b>3.5</b> Social marketing strategy delivered with target communities and behavioural changes observed and recorded.	Too early to report	
<b>Output 4.</b> .	<p>3.1 Baseline study using social surveys and focus group discussions on perceptions, values and social norms carried out in the 8 communities by the project's experts by yr 1</p> <p>3.2 Improved livestock protection practices/husbandry identified and implemented among households by yr 2 by providing training and assistance with predator-proof</p>	<p>Baseline data has been collected through interviews and focal groups.</p> <p>Too early to report</p>

	<p>enclosures, water pits and best practice livestock management</p> <p>3.3 80% of households in 4 communities report reduced predation on their livestock by yr 3</p> <p>3.4 Design of social marketing and/or behaviour change strategy to increase valuing and tolerance of bears in the project communities, end of yr 1</p> <p>3.5 Implementation of social marketing strategy in yr 2 and measurable changes in behaviour changes observed, by yr 3</p>	<p>Too early to report</p> <p>Will be carried out this May</p> <p>Too early to report</p>
<b>4.1</b> Camera traps located following protocol developed by the research team and revision/change memory/batteries plan implemented;	Cameras are set according to protocol	
<b>4.2</b> Training of new community parabiologists completed;	New parabiologists have received training.	
<b>4.3</b> Preliminary findings shared with stakeholders;	Too early to report	
<b>4.4</b> Bear and other wildlife identified via camera trap images and observational sightings.	Database includes all information on presence of target species.	
<b>Output 5</b> <u>Policy and governance</u> : the project catalyses effective collaboration among its partners, facilitating a co-owned effort between all stakeholders to implement Bolivia's Andean bear action plan.	<p>5.1 Joint workshop with government, project partners, and community representatives to plan out implementation of the Andean bear action plan in the project region, yr 1</p> <p>5.2 Working group to collaborate on oversight of the above established,</p>	<p>Workshop with authorities has been carried out and implementation of the action plan has been agreed.</p> <p>Too early to report</p>

	<p>and regularly meet to review progress yr 2 and 3</p> <p>5.3 Project senior staff have regular bi-annual meetings with CBD focal point and government authorities to review Andean bear protection and human wildlife conflict and work towards ensuring the protection of protected areas</p>	Too early to report
<b>5.1.</b> Workshop with government authorities and community representatives to implement the Andean bear Action Plan held;	Meetings with government authorities have been carried out to establish implementation of the action plan	
<b>5.2</b> Activities and regular meetings with the working group held;	Too early to report	
<b>5.3</b> Meetings with CBD to assess progress held	Too early to report	



**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
<p><b>Impact:</b> (Max 30 words)</p> <p><b>Linking poverty reduction and biodiversity conservation improves the wellbeing of communities and the population of threatened Andean bears in a key region of its global range.</b></p>			
<p><b>Outcome:</b> (Max 30 words)</p> <p>The livelihoods of local communities and the conservation of Andean bears co-benefit from an integrated approach linking and improving livelihoods and co-existence with bears and pumas in the dry forests of the Pilaya watershed, Bolivia.</p>	<p>0.1 Eight communities (up to 200 households) develop supplementary livelihoods to reduce levels of poverty and increase wellbeing by end of yr 3</p> <p>0.2 Capacity, agency and confidence of at least 100 community members in Pilaya communities to adapt to socio-environmental change in their areas is improved by end of yr 3</p> <p>0.3 Key beneficiary communities show positive changes in acceptance of bears, demonstrated by a 50% increase in tolerance by comparing baseline and final surveys by end of yr 3</p> <p>0.4 Understanding of distribution and ecological needs of Andean bears and pumas in inter-Andean dry forest are much improved as a result of the data collected and</p>	<p>0.1, 0.2, 0.3 Quantitative and qualitative social research data collected during the pilot study and at baseline and completion of project demonstrate changes as a result of the project's work, indicating progress towards project aim and impact</p> <p>0.4 Ecological and biological data collected and analysed from 2016-2021 provide information for understanding and monitoring the distribution, movements, and ecological needs of Andean bears and pumas in inter-Andean dry forest</p> <p>0.5 Multi-stakeholder consultations and progress reports, documentation and press coverage, show collaboration in implementation of the Andean bear action plan</p>	<p>Communities are willing and able to participate in the project</p> <p>Government and communities support for the project continues</p> <p>Communities are willing to work with project researchers to develop supplementary livelihoods</p> <p>Communities are willing and able to adapt to socio environmental changes in their areas</p> <p>No unforeseen extreme events cause further decrease in perceptions about bears and pumas</p> <p>Enough data on bears and pumas have been collected to be analysed yr 1</p> <p>Effective protection against hunting Andean bears in the project region (Dry forests) is enforced</p>

	<p>analysed by the project, including previous years data collected</p> <p>0.5 Implementation of the national action plan for Andean bears is underway in the project areas through a collaborative effort with government and communities, providing a model for other regions of Bolivia, resulting in recognised legal protection for the bears and their habitat</p>		
<p><b>Outputs:</b></p> <p>1. <u>Livelihoods and wellbeing</u> are improved among the project communities as a result of villagers adopting improved livestock management practices and developing supplementary livelihoods.</p>	<p>1.1 Process of participatory theory of change planning with project community members and project team completed by end yr 1</p> <p>1.2 Alternative livelihoods opportunities explored with 4 communities (approx. 100 households) by end yr 1, with market analysis conducted and report produced by project team/advisors</p> <p>1.3 Wellbeing and livelihoods (current and aspirations) discussed and defined with and by 4 communities by end yr 1 using focus groups and one to one interviews</p> <p>1.4 30% of households in the 4 communities have taken up an alternative sustainable livelihood by end of yr 2</p> <p>1.5 Participating households' ability to generate income from alternative</p>	<p>1.1 Interim report on outcomes from participatory livelihoods exploration, and local/subsistence market analysis with clear theory of change pathways formulated</p> <p>1.2 Baseline and monitoring wellbeing and social data collected via a combination of methods, including focus groups, social surveys, context and social inclusion analyses and national indices</p> <p>1.3 Interview surveys on household economics, knowledge, attitude and behaviour (quantitative) compared to national levels</p> <p>1.4 Participant/staff observation and focus groups (by project staff and at project end by independent evaluator) on alternative sustainable livelihood take up (qualitative) resulting in report in yr 3</p>	<p>Communities are willing and able to engage in participatory theory of change planning</p> <p>Communities are willing and able to adopt alternative livelihoods</p> <p>Various means of verification (surveys, reports, observation, focus groups) allow for triangulation of information to provide robust M&amp;E</p> <p>No major social, economic, political or environmental disaster to significantly impede project progress</p> <p>Through the adoption of new livelihoods human and economic wellbeing increase (measured via social surveys)</p>

	livelihoods has increased by 15% compared to baseline, by end yr 3	1.5 Baseline social survey and final survey comparisons	
2. <u>Capacity building and training</u> helps communities improve resilience to environmental changes and foster their ability to develop sustainable livelihoods independently.	<p>2.1 Community consultations on areas for training, based on initial feedback from above (1.1-1.3) completed in early yr 2.</p> <p>2.2 Training and mentoring events for alternative livelihoods carried out in 4 communities, reaching out to 100 households, by end of year 2</p> <p>2.3 50% of project households have at least one member who has attended the workshop events by end yr 2</p> <p>2.4 Feedback and learning review carried out with communities by yr 3 via stakeholder meetings in project areas</p>	<p>2.1 Interim report on outcomes from consultation on training needs, and schedule of training events</p> <p>2.2 Attendance records, feedback surveys/discussions</p> <p>2.3 Notes on observations about capacity building and training carried out and attendance records taken</p> <p>2.4 Stakeholder meeting notes recorded and reported</p>	<p>Community members are interested in joining the project and the training offered, and work cooperatively with the project team</p> <p>Community members attend consultations and share openly their desires and aspirations</p> <p>Community members see value and interest in attending training workshops</p>
3. <u>Safe coexistence</u> of Andean bears, pumas and people in the project area is attained through a combination of reduced livestock losses, increased benefits from conservation and more wildlife-tolerant social norms.	<p>3.1 Baseline study using social surveys and focus group discussions on perceptions, values and social norms carried out in the 8 communities by the project's experts by yr 1</p> <p>3.2 Improved livestock protection practices/husbandry identified and implemented among households by yr 2 by providing training and assistance with predator-proof enclosures, water pits and best practice livestock management</p>	<p>3.1 Social data baseline and monitoring data collected via questionnaire surveys, focus groups, and participant observation</p> <p>3.2 Observed and documented modifications in livestock keeping to reduce predation by bears or pumas</p> <p>3.3 Record-keeping of livestock attacks by bears, and any other causes of mortality</p> <p>3.4 &amp; 3.5 Qualitative data show changes in perceptions, values and</p>	<p>Communities are willing and able to engage in project activities</p> <p>Government partner agencies remain supportive of project activities</p> <p>Community members are willing to attend and participate in human behaviour changing activities</p> <p>Social marketing strategy brings about human behaviour change and raises public awareness that bears are not a threat to their livelihoods</p>

	<p>3.3 80% of households in 4 communities report reduced predation on their livestock by yr 3</p> <p>3.4 Design of social marketing and/or behaviour change strategy to increase valuing and tolerance of bears in the project communities, end of yr 1</p> <p>3.5 Implementation of social marketing strategy in yr 2 and measurable changes in behaviour changes observed, by yr 3</p>	<p>social norms vis-a-vis bears and pumas among community members, as initial indicators of acceptance and co-existence</p>	<p>Valuing of and tolerance towards bears and pumas increases due to social marketing strategies and doesn't decrease</p>
<p>4. <u>Evidence base</u> for bear and puma presence, movements, and habitat is generated, through participatory monitoring, and the physical and spatiotemporal aspects of human-bear conflict dynamic are better understood.</p>	<p>4.1 Bear and puma monitoring via camera trapping and observation by team conducted through out project life cycle</p> <p>4.2 At least eight community members, one in each community, recruited and trained as parabiologists to assist with bear research, in yr 1</p> <p>4.3 Community parabiologists and project team share research findings together, facilitating positive interest and engagement also with peers, children and authorities, yr 2-3</p> <p>4.4 Camera data allow identification of individuals based on facial marks and other wildlife; analysis completed by yr 3</p>	<p>4.1 Camera trapping study protocol, methods documented and data collected</p> <p>4.2 &amp; 4.3 Documentation of parabiologist training and activities, plus certification of achievement awards given to parabiologists</p> <p>4.4 Camera trap data collected and catalogued into shareable dataset/base</p> <p>4.4 Preliminary findings written into project yearly report, in addition to a report for government authorities</p>	<p>No more than 10% camera failure during the project</p> <p>Camera trap image quality generates sufficient database of individuals for recognition of facial markings</p> <p>Camera traps do not incur theft and vandalism</p> <p>Communities, and community members allow camera traps to be set up on their land and support the project</p> <p>Interest in and uptake of parabiologist initiative and training opportunities (as has been done elsewhere in Bolivia) by community members</p>

<p>5. <u>Policy and governance</u>: the project catalyses effective collaboration among its partners, facilitating a co-owned effort between all stakeholders to implement Bolivia's Andean bear action plan.</p>	<p>5.1 Joint workshop with government, project partners, and community representatives to plan out implementation of the Andean bear action plan in the project region, yr 1</p> <p>5.2 Working group to collaborate on oversight of the above established, and regularly meet to review progress yr 2 and 3</p> <p>5.3 Project senior staff have regular bi-annual meetings with CBD focal point and government authorities to review Andean bear protection and human wildlife conflict and work towards ensuring the protection of protected areas</p>	<p>5.1 Workshop reports created with next step action points identified and appropriate level of local and national press publications</p> <p>5.2 Documentation/notes from follow-up meetings and activities of working group and government focal points.</p> <p>5.3 Meeting minutes and progress reports produced</p>	<p>No changes in government authorities or delays in meetings to confirm the actions this project will take in order to implement the Action Plan</p> <p>Multi-stakeholders contribute in the process, have buy-in and commitment to the Action Plan</p> <p>Government authorities continue to support the project and the Andean bear action plan</p> <p>Bolivian protected areas maintain protected status and have government support and enforcement</p>
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**Activities** (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)

- 1.3. Participatory theory of change plans report completed with input from community members;
- 1.4. Baseline qualitative data collection completed (focus groups, semi-structured interviews) in project communities;
- 1.3 Baseline quantitative survey developed, piloted and administered in project communities;
- 1.4. Viable alternative livelihoods identified, and market assessment and other finance opportunities completed;
- 1.5. Alternative livelihoods initiatives established in project communities with supported where necessary by SM campaign and continuing guidance for start-up households/groups provided in yr 2.
  
- 2.1 Interim report on areas for training completed;
- 2.2 Training schemes for alternatives/more efficient use practices developed and workshops held in project communities by end of yr 2;
- 2.3. Training workshop attendance records collated and produced documenting participation numbers;
- 2.4 Schemes and practices monitored, reviewed (with communities) and adapted as necessary, training and information-sharing events, to which neighbouring communities are invited, held to encourage replication of ideas.
  
- 3.1 Baseline qualitative data collection completed (focus groups, semi-structured interviews) in project communities;
- 3.2 Improved livestock protection practices/husbandry rolled out, monitored, reviewed (with communities) and adapted as necessary;
- 3.3 Depredation rates monitored and recorded monthly leading to identification and viability assessed of livestock protection/husbandry with project communities;

- 3.4** Social marketing strategy developed, piloted and administered in project communities;
- 3.5** Social marketing strategy delivered with target communities and behavioural changes observed and recorded.
  
- 4.1** Camera traps located following protocol developed by the research team and revision/change memory/batteries plan implemented;
- 4.2** Training of new community parabiologists completed;
- 4.3** Preliminary findings shared with stakeholders;
- 4.4** Bear and other wildlife identified via camera trap images and observational sightings.
  
- 5.1.** Workshop with government authorities and community representatives to implement the Andean bear Action Plan held;
- 5.2** Activities and regular meetings with the working group held;
- 5.3** Meetings with CBD to assess progress held.

### 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	Number of people to receive other forms of education/training (which does not fall into categories 1-5 above) *	21 women 54 male	Bolivians	75	125			200
6B	Number of training weeks to be provided							
9	Number of species/habitat management plans (or action plans) to be produced for Governments, public authorities, or other implementing agencies in the host country			1				
10	Number of individual field guides/manuals to be produced to assist work related to species identification, classification and recording			1				2
11A	Number of papers to be published in peer reviewed journals							
11B	Number of papers to be submitted to peer reviewed journals							
12A	Number of computer based databases to be <b>established</b> and handed over to the host country							
12B	Number of computer based databases to be <b>enhanced</b> and handed over to the host country							
14A	Number of conferences/seminars / workshops to be <b>organised</b> to present/disseminate findings							
14B	Number of conferences/seminars / workshops <b>attended</b> at which findings from							

	Darwin project work will be presented/ disseminated.							
20	Estimated value (£'s) of physical assets to be handed over to host country(ies)			£8,000 2 GPS, sleeping bags, stoves; Camera traps, SD cards, viewers (#2) Portable cameras (#2), recorders (#2) laptops #2, Projector #1 and #2 external harddrives				
22	Number of permanent field plots and sites to be established during the project and continued after Darwin funding has ceased							



**Table 2 Publications**

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

**Annex 4 Onwards – supplementary material (optional but encouraged as evidence of project achievement)**

**Checklist for submission**

	Check
<b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> putting the project number in the Subject line.	yes
<b>Is your report more than 10MB?</b> If so, please discuss with <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> about the best way to deliver the report, putting the project number in the Subject line.	no
<b>Have you included means of verification?</b> You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	yes
<b>Do you have hard copies of material you want to submit with the report?</b> 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.	no
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.	