

Progress Report IV

2005-2006



Andean bear (*Tremarctos ornatus*) (Lizcano, 2003)

Evaluating the conservation status of the threatened Andean bear (*Tremarctos ornatus*) in Sierra de Portuguesa, Venezuelan Andes: Designing a management strategy.

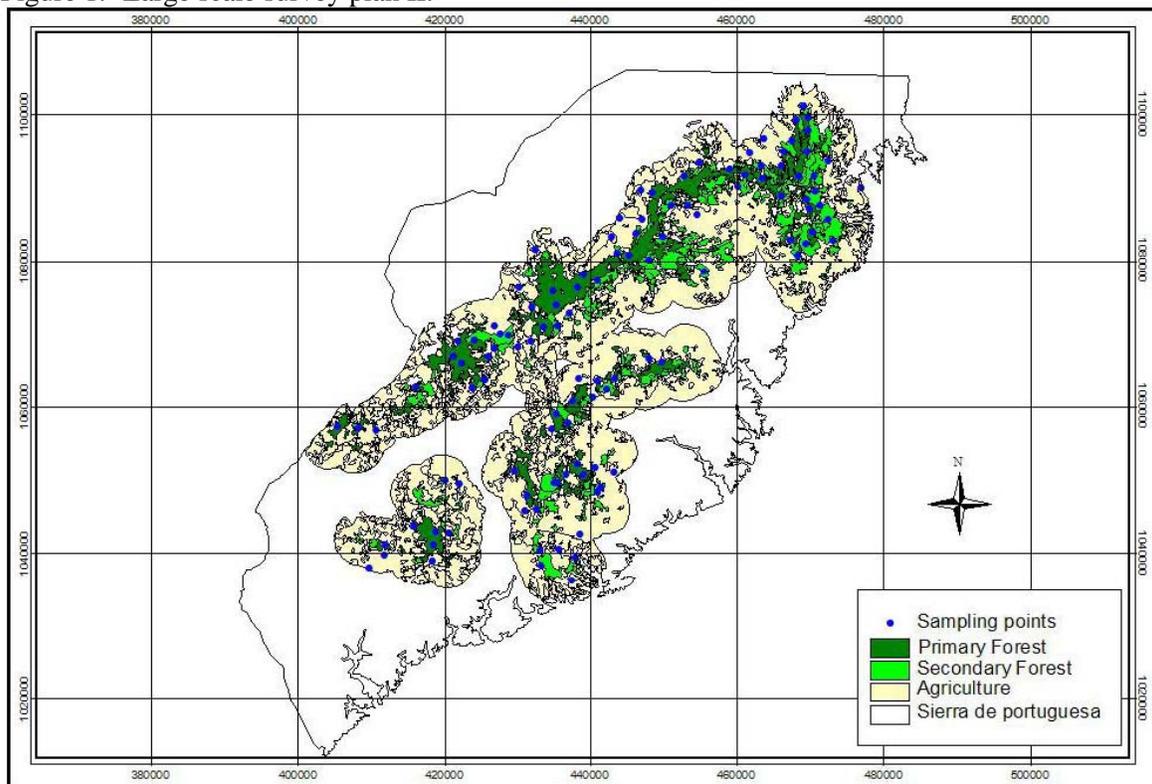
Shaenandhoa García-Rangel
Ph D Candidate
Wildlife Research Group
Anatomy Department
University of Cambridge

Associate Researcher
Fundación Andígena
Fundación para la Defensa de la Naturaleza (FUDENA)
Denver Zoological Foundation

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The large scale survey was re-planned according to Dr Augeri's suggestions. Using the GIS database of Sierra de Portuguesa, 75 non-permanent fixed-width transects (500x10m) with a truncated-distance sampling alternative, were selected following a regular (equal sample size $N = 25$) - random sampling approach for each **Habitat Type: Primary and Secondary Forest, Agriculture** (See Figure 1). Minimum distance between transects was increased to 1.5km to assure data independency. No confident records are available on Andean bear daily-travel or home-ranges. Thus, the distance chosen was a compromised between the largest distance that allowed to fit 25 transects on each **Habitat Type**, and the average daily-travel distance estimated from the smallest home-range reported for the species (7km²), assuming its circular shape^[1].

Figure 1.- Large scale survey plan II.



Evaluation of Andean bear use of **Microhabitats** was included for each **Habitat Type** by placing its 25 transects on a regular-random sampling layout according to the number of **Microhabitats** selected on each:

- **Primary Forest:** Montane and Sub-Montane.
- **Secondary Forest:** Young (Up to 15 years old) and Old (Over 15 years old) / Montane, Sub-Montane and Lowlands.

- **Agriculture:** Open (No canopy cover) and Close (Shadow-coffee) / Montane, Sub-Montane and Lowlands.

Due to time constraints, seasonal changes were not contemplated on the sampling design. Andean bear seasonality on habitat and landscape-use is indirectly assessed from sign-aging.

Andean bear use of **Edges** and **Dirt Roads** was also incorporated on data collection, to allow an in-depth analysis of bear habitat and landscape-use of these particular habitat elements. **Edges** were defined as the first 100m between two **Habitat Types**, and a set of 32 transects (500x10m) were to be sampled across the different **Microhabitats** available following a regular-random sampling approach: 1) **Primary Forest - Agriculture**, 2) **Secondary Forest – Agriculture**, 3) **Primary Forest - Secondary Forest** / Montane and Sub-Montane. For 1) and 2) transects were to be lay inside the forest in parallel to the **Edge** at either 0m or 50m from it. For 3) transects were placed perpendicular to the **Edge** sampling both **Habitat Types**, given that the **Edge** was difficult to identify along the survey area. **Dirt Roads** were defined as the categories *Carretera de Tierra* and *Camino Carretero* of the 1:100.000 cartographic maps of the Instituto Geográfico Simón Bolívar. A total of 25 transects (500x10m) were to be placed along randomly-selected roads across those previously mentioned **Habitat Types**. Equal sample size was kept between them.

Finally, 20% randomly chosen pseudo-replicates were included on the sampling design for each main category (**Habitat Type**, **Edges** and **Dirt Roads**) to evaluate possible outliers. Randomly chosen vegetation plots (100x10m) were to be survey on each transect for estimation of food resources availability. Ground Control Points (GCP) for validation of the Vegetation cover map, were also to be collected during fieldwork.

February - July 2006

Fieldwork was set to start by mid-February with a total of 20 field-journeys to be performed, but it was delayed due to changes and training of field-staff. By mid-March, the team was set and ready to go, and a total of 10 field-journeys were conducted continuously until July (See Table 1 and Figure 2). Thanks Dr Augeri's suggestions field efficiency increased from 10 transects per month to over 15 transects, and a better understanding of vegetation coverage, human activities, local impact and bear habitat-use was being obtained after the survey modifications.

Table 1.- Fieldwork conducted from February to July 2006 for the Large Scale Survey II.

Field-journeys	Site	Period	Number of Transects
1	La Florida	February 20 th – 27 th	6
2	El Manzanal	March 13 th – 22 nd	8
3	La Victoria	March 25 th – 3 rd	6
4	Riecito – Pica Alta	April 6 th – 15 th	8
5	Piedra del Tigre	April 20 th – 28 th	9
6	Las Quintas de Terepaima	May 4 th – 10 th	5

7	Paujisal	May 23 rd - June 2 nd	9
8	El Blanquito	June 8 th - 13 th	8
9	Caspo 1	June 19 th - 25 th	8
10	Caspo 2	July 2 nd - 13 th	8
Total of transects conducted			75

Figure 2.- Field activities: A) Alfredo Freitez and local children in La Cuchilla. B) Francisco Daza (New assistant), the PI and Gusman Perez in Cubiro. C) Francisco Daza, Gusman Perez, the PI and the Escalona Family in Guamacire. D) Field-assistants in Cubiro.



August – December 2006

During mid-July, the PI developed a serious allergy to a tree species found across the Study Site, “Palo de Tigre” or “Pepeo” (*Mauria puberula*), and had to be taken to Caracas (Capital City) for medical treatment; thus fieldwork was suspended. Following physician’s advised coming activities were reduced; pseudo-replicates were eliminated together with 3 of the remaining 10 field-journeys. The ones kept for survey were selected to ensure sampling coverage across the entire Sierra de Portuguesa. Fieldwork continued by the end of August and finished by mid-December (See Table 2 and Figure 3). The services of a Botanist were hired to help with the vegetation plots and to proceed with the identification of the already collected vegetation samples (See Figure 3). The PI is confident that the objectives of this project will be fulfilled with the data collected, given that it represents over

80% of the original sample plan, and that the changes were carefully chosen to attend sample needs at that cut-up point.

Finally, it is important to highlight that over this last one year of fieldwork a total of 111 transects and its correspondent vegetation plots were surveyed, 4 field-assistants from local communities were hired and trained on field-data collection and biodiversity conservation. Additionally, three educational talks were given to local schools related to Andean bear and ecosystem conservation.

Table 2.- Fieldwork conducted from August to December 2006 for the Large Scale Survey II.

Field-journeys	Site	Period	Number of Transects
11	Montaña Mundo Nuevo	August 25 th – 31 st	4
12	Sanarito – Villanueva	September 5 th – 11 th	4
13	Guache de Garabote	September 16 th – 24 th	9
14	Cerro La Mucutia	October 8 th – 15 th	6
15	Marilonza I	November 10 th – 15 th	5
16	Marilonza II	November 19 th – 27 th	5
17	Cerro El Pingano	December 7 th – 11 th	3
Total of transects conducted			33

Figure 3.- Field activities: A) The PI, Dorangel Nuñez (Botanist), Henry Sánchez (New Assistant), Francisco Daza in Cerro Papelón. B) Palm tree eaten by an Andean bear in Piedra Hueca. C) Andean bear claw marks in Guariquito.



Other Activities

- Educational Talk: ¿Quién es el Salvaje?, Matatere Community - Sierra de Portuguesa.
- Education Talk: Mision Sucre, Cubiro – Sierra de Portuguesa.
- Educational Talk: “ Proyecto Oso Andino Sierra de Portuguesa”, Cubiro – Sierra de Portuguesa.

Sing Aging Project

Period: January – August 2006.

Continuing with the activities started on August 2005, a monthly visit was conducted to the Sign Aging Project set in Cubiro, by the project team as a whole. Eaten bromeliads, Mapora (*Prestoea acuminata*) palm trees, rubbing trees, day-beds, superficial claw-marks, tracks, scats, hairs and some bitten roots were no longer distinguishable as bear-signs after six months (See Figure 4). The visits concluded after on year survey, and only deep claw-marks on trees and some palm trees of the *Geonoma* and *Wettinia* genera were identify as bears-signs until the end (See Figure 4).

Figure 4.- Andean bear signs of the Sign Aging Project : A) Macanilla (*Wettinia praemorsa*) no longer distinguish as bear-sign after eleven months. B) Andean bear deep claw-mark distinguishable as bear-sign after twelve months. C) Palmiche (*Geonoma undata*) distinguishable as bear-sign after twelve months. D) Andean bear deep claw-mark distinguishable as bear-sign after twelve months.



Venezuelan Andean bear Action Plan Update

Period: January – December 2006

The manuscript summarizing the results on the workshop “Estrategias para la Conservación del Oso Andino en Venezuela”, organized by the Wildlife Research Group - University of Cambridge, Fundación para la Defensa de la Naturaleza (FUDENA), Universidad Simón Bolívar and Red Tremarctos to evaluate and update the Venezuelan Andean bear Action Plan is almost ready and looking for funding for publication. The compiled document presents a through review on the species threatens in the country and the actions required during the following ten years ensuring its long term conservation.

Interviews

Period: January – December 2006

Unfortunately no progress has being made in relation to the interview research supported by this project, and thus the PI has decided to step-a-side giving the need for her return to the UK during the analysis phase.

Grants Awarded

Source	Amount US (\$)	Date
The Denver Zoological Foundation	5,000	January 2006
The International Bear Association	3,500	March 2006
The Rufford Small Grants	9,000	November 2006
Total	17,500	

References

1. Paisley, S., *Andean bear and people in Apolobamba, Bolivia: Culture, conflict and conservation*, in *Department of Antropology, Durrell Institute of Conservation and Ecology*. 2001, UK: Canterbury. p. 352.