

Darwin Initiative: Half Year Report

(due 31 October 2010)

Project Ref. No.	17-012
Project Title	Belize large-mammal corridor project
Country(ies)	Belize
UK Organisation	University of Southampton School of Biological Sciences (UoS)
Collaborator(s)	Panthera, University of Belize (UoB), Belize Forestry Department (BFD)
Project Leader	<i>C. P. Doncaster</i>
Report date	<i>31 October 2010</i>
Report No. (HYR 1/2/3/4)	<i>HYR 2</i>
Project website	<i>http://darwin.defra.gov.uk/project/17012/ http://www.belizewildliferesearch.com/index_files/Page972.htm</i>

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

(i) Rigorously calibrated data on mammal movement through fragmented landscapes

We have acquired a high resolution SPOT satellite image (2010) of the corridor area through a Planet Action grant to Panthera to assist with habitat mapping (Activity 1.1.1). Systematic surveys of burrows (Act 1.2.1) are going to schedule. Camera trapping is continuing on schedule with two large-scale and five small-scale surveys now completed (Act 1.2.5), and analysis of camera trap data underway. Live trapping of mammals using cage traps is underway (Act 1.3.3). We have begun telemetry of prey mammals (Act 1.4.1) and conducted an evaluation of radio-tracking accuracy and home range use by prey mammals. Senator Omar Figueroa has continued to live trap, collar and track jaguars and pumas (Acts 1.3.1 and 1.4.1). We have also investigated diet of jaguars and pumas in the corridor area, and assessed food conversion to scats in captive jaguars at The Belize Zoo, essential for estimating biomass consumption of prey in the wild (the study was featured in a national newspaper). We have conducted >800 interviews to assess game meat consumption (Act 3.1.1 & 3.1.2). PhD student Angela Watkins at the UoS is now about to start development of least-cost paths for analysing corridor permeability (Acts 2.1), built from our database of movements of large and medium-sized mammals in the corridor. Since April we have had another research paper accepted for publication (Act 4.2.1): Harmsen et al (2010) Jaguar and puma activity patterns in relation to their main prey. *Mammalian Biology*, in press.

(ii) Instilling a tradition of objectively-based mammal monitoring in Belize

During June and July, ten UoB undergraduates joined a six-week internship program with the corridor project. This is the first time that UoB undergraduates have had the opportunity to participate in large-scale ecological research and applied conservation in Belize. In July they were joined by 11 UoS Biology undergraduates for 2 months. The students were involved in all aspects of the project from manual field labour (shifting traps) to live-trapping, telemetry, data handling and experimental design. The students attended a ceremony marking the official protection of the northern part of the corridor (see *(iv)*). After the ceremony they dined and chatted with the Deputy Prime Minister and Minister of the Environment, Hon Gaspar Vega. Hon Vega was delighted by the mix of Belizean and international students at the ceremony and impressed by their commitment to the corridor research and implementation.

(iii) Delineation of the belt of contiguous wilderness that will constitute the wildlife corridor

We have renovated a research house on a key piece of private land within the corridor (Big Falls, 150 km²). Use of the house, and field activities (live trapping) on the lands, ensures a permanent research presence on the property. The owners support this move as it helps reduce the threat of illegal hunters and loggers. We see potential to develop this area for ecotourism as an economic activity that is compatible with corridor function (Act 3.1.3). However, given the extensive area of forest on the property we are investigating the potential of

this land for carbon sequestration. In addition, Senator Omar Figueroa is investigating opportunities to reduce land tax for key properties within the corridor, such as Big Falls, which are otherwise taxed heavily for not developing the land.

Following the recent launch in early October of the National Protected Areas Secretariat and the National Land Use Policy and Planning Framework for Sustainable Land Management, we are planning to meet with the Secretariat to discuss corridor implementation.

(iv) Advocacy, leading to implementation of the corridor within the legal framework of Belize

Thanks to the high-profile large-scale ecological research in the corridor, and the hard work of Darwin consultant Senator Omar Figueroa, the Belize Government have protected the last remaining crown land (36 km²) within the corridor area (Acts 4.1.5. and 4.1.7). This is a crucial link in the corridor, being the only section of the Belize River that still retains riparian forest on both banks. Hon Gaspar Vega gave the keynote speech at the ceremony on 29th July to mark official declaration of *Labouring Creek Jaguar Corridor Wildlife Sanctuary* and the signing of a Letter of Understanding between the Belize Government and Panthera acknowledging the importance of connectivity at a national level. We are developing a needs assessment for the new sanctuary and seeking funding for its management through Panthera. The ceremony, jointly funded by the Darwin Initiative and Panthera, was attended by Government officials, regional Ambassadors, the University of Belize, national NGOs, and the press.

PI Dr Doncaster presented the project at the September meeting of the UK Belize Association.

2. Give details of any notable problems or unexpected developments that the project has encountered over the last 6 months. Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

Trapping of medium-sized mammals (Acts 1.4) has progressed more slowly than expected, with only two pacas radio-collared to date. During the dry season 6 months ago, camera traps at locked-open and baited live traps revealed frequent visits by target species. Delays in sourcing anaesthetics stalled live trapping until the end of the dry season. We then caught three pacas in 6 days (one too young to collar). Trap success declined dramatically once the rains began. The corridor is in the lowest part of the country, so frequent wide-scale flooding is a problem here. Our field crew are constantly monitoring and moving traps. We are hopeful that the worst of the rains will pass after October, and trap success will increase once more.

We are about to submit a Change Request for redeployment of year-2 funds designated for UoB and the BFD. We see advantage in designating some UoB overheads to UoB trapping equipment and meetings of a Working Group to develop the National Biodiversity Monitoring Programme; and some BFD funds towards public awareness about the corridor.

Cat 1 Hurricane Richard passed directly over the corridor on 24-25 Oct, inflicting landscape-changing destruction. Damage control and evaluation is ongoing at homes of project personnel and at field sites. Early indications suggest little loss of equipment, but new trails need cutting to camera- and live-trap locations amongst swathes of fallen trees. Delays to surveying and trapping seem inevitable, and downsizing a possibility.

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

No changes required at this stage; we are continuously monitoring the situation

Discussed with LTS: No

Formal change request submitted: None yet in year 2

Received confirmation of change acceptance N/A

3. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures? No

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

Please note: Any planned modifications to your project schedule/workplan or budget should not be discussed in this report but raised with LTS International directly.

Please send your **completed form by email** to Eilidh Young at Darwin-Projects@ltsi.co.uk . The report should be between 1-2 pages maximum. **Please state your project reference number in the header of your email message eg Subject: 14-075 Darwin Half Year Report**