Darwin Initiative Final Report
Project reference 14-008

The Darwin Initiative Centre for Bat Conservation in China

Project leader: Professor Gareth Jones, School of Biological Sciences, University of Bristol, Woodland Road, Bristol BS8 1UG

Project partner: Professor Shuyi Zhang, Institute of Zoology, Chinese Academy of Sciences, 25 Beisihuan Xilu, Beijing 100080, China and School of Life Science, East China Normal University, Shanghai 200062, China.

Darwin Initiative – Final Report

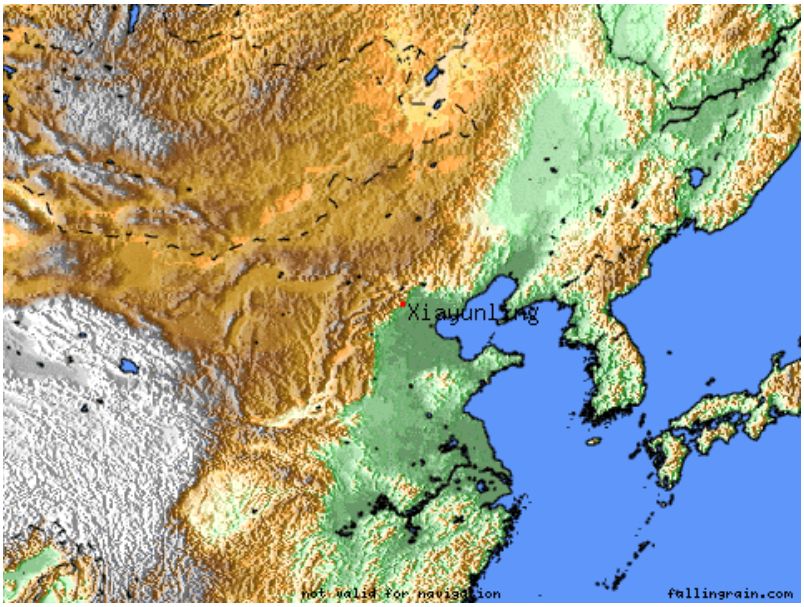
*(To be completed with reference to the Reporting Guidance Notes for Project Leaders (http://darwin.defra.gov.uk/resources/reporting/) - it is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)*

Darwin project information

Project Reference	14-008
Project Title	The Darwin Initiative Centre for Bat Conservation in China
Host country(ies)	China
UK Contract Holder Institution	University of Bristol
UK Partner Institution(s)	
Host Country Partner Institution(s)	Institute of Zoology, Chinese Academy of Sciences, Beijing
Darwin Grant Value	£112,000 (plus £30,000 from Chinese collaborators)
Start/End dates of Project	1 July 2005 - 31 October 2008 (includes 4 month agreed no-cost extension to host more students)
Project Leader Name	Professor Gareth Jones
Project Website	http://www.bio.bris.ac.uk/research/bats/China bats/index.htm
Report Author(s) and date	Gareth Jones, Shuyi Zhang, October 2008

1 Project Background

The Darwin Initiative Centre for Bat Research and Conservation is situated in Xiayunling, 100km SW of Beijing (map below). The project is in collaboration with Professor Shuyi Zhang (Chinese Academy of Sciences and East China Normal University, Shanghai). Despite their rich faunal diversity, bats in China are threatened due to habitat loss, cave disturbance and human consumption. Our aims were to build capacity for bat research in China; to improve understanding of the taxonomy of Chinese bats; to develop a website about the identification and biology of Chinese bats; to provide education programmes from an education centre about the importance of bat conservation.



2 Project support to the Convention on Biological Diversity (CBD)

The primary objective of the Convention on Biological Diversity is the conservation of biological diversity, including appropriate transfer of relevant technologies. We have contributed towards this objective by increasing the knowledge base regarding bats in China, initiating education programmes, and by training Chinese students in the UK. Details are provided in Annex 3.

We have built capacity so that a sustainable research group exists to conduct research on the conservation biology of bats in China: Professor Zhang now supervises about 30 PhD students, and some recent graduates have moved on to permanent positions in elsewhere in China. Another (supported by this grant) is now obtaining postdoctoral experience in the USA.

The project began with the aim of developing a centre for bat research and conservation in Guangzhou, southern China. The start of the project coincided with an outbreak of SARS in the region however, and unfavourable publicity about bats meant that the centre was developed near Beijing, with approval from the Darwin Initiative. Over the course of the project, Professor Zhang has also established a laboratory in Shanghai (East China Normal University- ECNU), and Professor Jones has been assisting with many projects based there.

Project partnerships: Professor Jones spent 5 weeks in China assisting with student projects at the Chinese Academy of Sciences in Beijing and ECNU over the course of the project. He also delivered a lecture to >100 students there. Five Chinese PhD students –Gang Li, Jinshuo Zhang, Zhe Wang, Lihong Yuan and Panyu Hua – spent over 7 months in total in the UK, mainly at the University of Bristol. The students also visited the Natural History Museum (London) and a colleague at the University of London (Dr Stephen Rossiter) to undertake research.

Other Collaborations: We continue collaboration with Kadoorie Farm Conservation Centre, Hong Kong, and host their booklet about the conservation of bats in Hong Kong and a link to their educational material on our website. During the project we enjoyed collaborations with scientists from elsewhere in the UK and China, New Zealand, Switzerland, Iran, the Czech Republic, Germany, Malaysia, and the USA (see publications).

3 Project Achievements

3.1 Impact: achievement of positive impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits

We have built capacity for sustainable bat research in China, initiated an education programme, and made contributions to better understanding the diversity and status of Chinese bat species via a range of publications in quality scientific journals. Specifically, we have built The Darwin Initiative Centre for Bat Research and Conservation in Xiayunling and this continues to host a number of research projects by Chinese researchers. The nearby primary school includes our education centre which has hosted lectures on bat conservation for schoolchildren. We have completed descriptions of 72 species for our website on Chinese bats (http://www.bio.bris.ac.uk/research/bats/China bats/index.htm) including photographs, range maps, echolocation call recordings and a bibliography. We published 10 papers in refereed journals, and another has been submitted on the distribution of horseshoe and Old World leaf-nosed bats in China. Our paper on a new bat species has been published, and we are negotiating for its known habitat to be protected. We have published 9 articles about the Darwin Initiative work in popular science magazines in Chinese, another one in English. Our work has featured on Chinese Television. Professor Jones spoke about the project at the First South East Asian Conference on Bat Research (Phuket, Thailand, May 2007) where he also led a workshop on acoustic monitoring of bats. Five Chinese PhD students received a total of 7 months training in the UK. One of the PhD students supported by the Initiative (Gang Li) has graduated, and moved to a postdoctoral position in Genetics at Texas A & M University. The other (Jinshuo Zhang) will graduate in July 2009.

3.2 Outcomes: achievement of the project purpose and outcomes

Overall, the project has seen more emphasise on the development of capacity for scientific research compared with education than was originally intended. The project exceeded its anticipated output of scientific papers threefold, and has helped build a research team of >25 PhD students in China. We have trained students to work in a wide range of methods in conservation biology, from describing new species to molecular ecology. The project has contributed to better describing biodiversity in China, educating schoolchildren about the need to conserve bats, and has raised the profile of science in China. Professor Jones has been appointed as an evaluator for the IUCN's Global Mammals Assessment for input into the assessment of endemic Chinese bats as a consequence of this project.

3.3 Outputs (and activities)

The initial problems in establishing the bat research centre at Guangzhou were overcome, and the Centre was eventually developed near Beijing.

3.4 Project standard measures and publications

Foundation and running of Darwin Initiative Centre for Bat Conservation. The research centre continues to host researchers – see pictures at http://www.bio.bris.ac.uk/research/bats/China bats/Research Centre.htm. Two PhD students based their studies at the centre in 2007-8. We purchased a floor at a nearby primary school for use as an education centre. We developed a PowerPoint presentation in Chinese about the importance of bat conservation ('Bats and us'). The first presentation at the centre to a large class of schoolchildren took place on 18 April 2007, with further talks to students from the University of Ethnic Minorities, Beijing students from the Institute of Zoology, Chinese Academy of Sciences, and schoolchildren in Shanghai.

Identification key for Chinese bats. We have completed an online version of this. Profiles of 72 bat species were completed, We believe this is one of the most thorough online guides to bats available at present. The site can be accessed at

http://www.bio.bris.ac.uk/research/bats/China bats/index.htm

with species accounts accessed by clicking on the family names in the left hand column of the page. We have also added a 'resources' page that includes material on bat conservation produced by Kadoorie Farm and Botanic Garden, Hong Kong, and links to Chinese accounts of some work under the Darwin Initiative grant.

Baseline data on population sizes of Chinese bats. We collected data on numbers of bats at roost sites visited. We have submitted a large manuscript of the distribution and status of horseshoe bats and Old World leaf-nosed bats in China to a specialist bat journal - *Acta Chiropterologica*: the manuscript is 65 pp long, and represents one of the most thorough accounts of distribution and numbers of Chinese bats. We will produce a further manuscript on the other bat families in China in the near future. The papers will be will be an important foundation for assessing any future changes in distribution and abundance of bats in China.

Education packages for teachers and children. We have produced a Chinese PowerPoint presentation 'Bats and us' for schoolchildren.

Lessons learned and best practises disseminated. We completed 9 articles on the Darwin Initiative work in Chinese popular science press. Two articles were published in *China Nature*. One of the articles describes our discovery of a new species of bat, *Barbastella beijingensis*. This work was covered extensively by the Chinese media, including an interview with S. and J. Zhang on 'Baike Tanmi' (Encyclopedia of Exploration) on CCTV-10. An article was written for the University of Bristol *Re:search* magazine. Filming of fish-catching bats at the Darwin

Initiative Centre for Bat Conservation appeared on the BBC's 'Wild China' in May 2008, and was also broadcast on CCTV China.

3.5 Technical and Scientific achievements and co-operation

Our major outputs have been 10 scientific papers published in refereed journals (appended). These are listed in Annex 5 with Darwin Initiative participants highlighted in bold. The key findings of this research were:

- Better understanding of the taxonomic status of small horseshoe bats in Asia.
- Description of the diet, echolocation calls and genetic diagnosis of an endemic Chinese bat *Myotis pequinius*.
- The discovery that a large bat species feeds extensively on birds, and appears to capture them in flight.
- Resolution of the phylogenetic position of an unusual bat in the family Hipposideridae, with the first description of its echolocation calls.
- Quantification of the genetic variation in greater horseshoe bats across their range, showing extensive genetic divergence of Chinese bats and the occurrence of two lineages with different echolocation calls in China, one of which is closely related to Japanese bats. This suggests that cryptic species occur in China.
- Showing that colonisation patterns that contribute to current patterns of genetic diversity in populations differ according to which genes are sequenced.
- Demonstration that the 'language gene' *foxp2* has undergone accelerated evolution in echolocating bats.
- Showing that a gene responsible for active hearing in bats underwent accelerated evolution in bats, and that phylogenies based on functional genes may be misleading.
- Description of a new bat species, *Barbastella beijingensis*, which was first captured near the Darwin Initiative Centre.

3.6 Sustainability and Legacy

Research on bat conservation is now established and will endure in China because of the establishment of a research team of critical mass. Prior to this project, there were virtually no publications on bat research in international peer-reviewed journals by Chinese researchers. Professor Zhang's laboratory is now respected internationally. Professors Zhang and Jones will apply for a BBSRC Chinese partnering award to continue collaborations, and have further publications planned. The Darwin Initiative Centres for Research and Education will continue to be used, with maintenance funded by grants held by Professor Zhang in China. For example, one of Professor Zhang's PhD students has just been appointed as a Biology teacher at the best middle school in Beijing, and he plans to take his students to the Centre next summer for their summer school.

4 Lessons learned, dissemination and communication

Dissemination via publications in high quality scientific journals has been substantial. In addition, 9 popular science articles were produced; many in Chinese (see Annex 5). Further publications are planned.

4.1 Darwin identity

The Darwin Initiative logo features at the Research Centre, the Education Centre, in our presentations and on the web site. The Initiative has been mentioned in all popular science articles, on Chinese TV, and has been acknowledged in all scientific papers.

5 Monitoring and evaluation

Ten papers were subject to external peer review and received favourable referees' comments. We published in several leading journals, including *Molecular Ecology* (twice: impact factor 5.2, *PNAS* (impact factor 9.6) and *PLoS ONE*, an emerging and important biology journal. The *PLoS ONE* paper was featured by *Science* (http://sciencenow.sciencemag.org/cgi/content/full/2007/919/1) and was picked up by media throughout the world.

5.1 Actions taken in response to annual report reviews

The review process was helpful and constructive. In the last annual review, the referee commented

'This is a highly successful project that has achieved a great deal in terms of solid science, awareness raising and capacity building. It has developed effective partnerships and shows every sign of a sustainable outcome and a notable legacy. There are no issues on which a response is required from the Project Leader; I look forward to the final report shortly'.

The last review was submitted at the end of April 2008, just prior to the project's proposed end on 30 June. However, a no-cost extension was granted so that two more Chinese students could be hosted in the UK. Since that third annual review, the major achievements (May-October 2008) were

- hosting two Chinese PhD students in the UK (September 2008).
- Publishing a paper in *PNAS* showing that sequences from functional genes can be misleading when reconstructing evolutionary history (lead author was Li Gang, PhD student funded under this award).
- Submission of a 65pp MS on the distribution and status of horseshoe bats and Old World leaf-nosed bats in China.
- Completion of website of bats in China, with 72 species now online.

6 Finance and administration

6.1 Project expenditure

	In grant proposal	**Actual spend**
Construction/running of Darwin Centre for Bat Research, including office costs and printing		
Display material for centre		
Travel and subsistence		
Conferences		

Capital equipment Includes Pettersson D1000x and Magenta bat detectors, Nikon D70 camera, computer and software, projector and harp trap for bat capture			
Staff costs: Education officer at centre, stipends for 2 PhD students			
Costs of Chinese PhD students studying in UK			
Total			

6.2 Additional funds or in-kind contributions secured

£30K was donated by the Chinese Academy of Sciences towards the building of the Darwin Centre for bat Research.

6.3 Value of DI funding

On 1 May 2008, Professor Zhang wrote the following to Eilidh Young

'I must say that this Darwin project, together with Gareth, has trained about 10 PhD and master students (even only two are included in the documents). And these students are the key persons for research and conservation of bats in China. We can perspect that: in 5-10 years, most of them will be professors of Universities, and then can teach their students about bats. So, this project is really the most important seed for bat research and conservation in China'.

Annex 1 Report of progress and achievements against final project logframe for the life of the project

Project summary	Measurable Indicators	Progress and Achievements	Actions required/planned for next period
Goal: *To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but constrained in resources to achieve* *The conservation of biological diversity,* *The sustainable use of its components, and* *The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources*			*(do not fill not applicable)*
Purpose Promotion of bat conservation in China by establishment of a bat conservation centre in Beijing. From the centre we will increase public awareness about bat conservation, improve identification of Chinese bats, and establish baseline data to assess population changes in Chinese bat populations.	(insert original purpose level indicators) Completion of Darwin Initiative Centre for Bat Conservation by yr 1. Education dissemination strategy implemented by year 1. Education material disseminated by yr 3. Bat identification key completed by yr 3. Baseline data on bat populations in cave sites.	The Centre for Bat Conservation continues to host research students, and the nearby education centre has opened and hosted talks. Online information for 72 bat species has been uploaded to website. Five papers in refereed journals published, also 3 popular science articles. Description of a bat species new to science published. Manuscript of first paper on distribution of horseshoe bats in China submitted. Li Gang completes and successfully defended PhD thesis at Chinese Academy of Sciences. Five Chinese PhD students hosted at Bristol. Presentation at First South East Asian Symposium of Bat Research.	
Output 1. Foundation and running of Darwin Initiative Centre for Bat Conservation.			
Activity 1.1 Building and operation of Darwin Initiative Centre for Bat Conservation		PhD students continue to work in projects at the Darwin Centre. Talk to schoolchildren at the education centre.	
Output 2. Identification key for Chinese bats (Chinese and English versions): online			

version to include echolocation calls and DNA sequences.			
Activity 2.1. Production of identification guide		All widespread species now have accounts.	
Output 3. Baseline data on population sizes of cave-dwelling bats.			
Activity3.1. Baseline population estimates		Population counts for horseshoe bats and Old World leaf-nosed bats listed in publication submitted to *Acta Chiropterologica.*	
Output4. Lessons learned and best practices disseminated			
Activity 4.1 Publicity		9 popular science articles published.	

Annex 2 Project's full current logframe

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Goal: To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising out of the utilisation of genetic resources			
Purpose Promotion of bat conservation in southern China by establishment of a bat conservation centre in Beijing. From the centre we will increase public awareness about bat conservation, improve identification of Chinese bats, and establish baseline data to assess population changes in Chinese bat populations.	Completion of Darwin Initiative Centre for Bat Conservation by yr 1. Education dissemination strategy implemented by year 1. Education material disseminated by yr 3. Bat identification key completed by yr 3. Baseline data on bat populations in cave sites.	Opening ceremony involving Chinese co-funders. Biannual meetings of project partners and all participants, including Chinese co-funders.	Chinese funding partners remain committed.
Outputs Foundation and running of Darwin Initiative Centre for Bat	Building completed staffed, displays	Biannual meetings of project	

Conservation. Identification key for Chinese bats (Chinese and English versions): online version to include echolocation calls and DNA sequences. Baseline data on population sizes of cave-dwelling bats. Education packages for teachers and children. Lessons learned and best practices disseminated	and education material developed. Key published in a peer-reviewed journal. Online version accessible. One PhD student trained. Population estimates published in scientific journal. One PhD student trained. Visits to Centre by teachers and classes. Estimated 50 school visits by yr 3, and 'pyramid' teaching by educating teachers and allowing PhD students to train undergraduates, who will then visit schools. CCTV documentary broadcast by yr 3. Radio broadcasts, articles (3+) in popular science magazines (e.g. National Geographic China).	partners and all participants. Publication after peer review, PhD student examined. Access statistics to website. Publications lodged with Darwin Initiative. Publication after peer review, PhD student examined. Publications lodged with Darwin Initiative. Questionnaires about attitudes of children to bats before and after education programmes. Viewing, circulation statistics.	Students of sufficient calibre located. Publications subject to peer review.

Annex 3 Project contribution to Articles under the CBD

Project Contribution to Articles under the Convention on Biological Diversity

Article No./Title	Project %	Article Description
6. General Measures for Conservation & Sustainable Use		Develop national strategies that integrate conservation and sustainable use.
7. Identification and Monitoring	30	Identify and monitor components of biological diversity, particularly those requiring urgent conservation; identify processes and activities that have adverse effects; maintain and organise relevant data.
8. In-situ Conservation		Establish systems of protected areas with guidelines for selection and management; regulate biological resources, promote protection of habitats; manage areas adjacent to protected areas; restore degraded ecosystems and recovery of threatened species; control risks associated with organisms modified by biotechnology; control spread of alien species; ensure compatibility between sustainable use of resources and their conservation; protect traditional lifestyles and knowledge on biological resources.
9. Ex-situ Conservation		Adopt ex-situ measures to conserve and research components of biological diversity, preferably in country of origin; facilitate recovery of threatened species; regulate and manage collection of biological resources.
10. Sustainable Use of Components of Biological Diversity		Integrate conservation and sustainable use in national decisions; protect sustainable customary uses; support local populations to implement remedial actions; encourage co-operation between governments and the private sector.
11. Incentive Measures		Establish economically and socially sound incentives to conserve and promote sustainable use of biological diversity.
12. Research and Training	50	Establish programmes for scientific and technical education in identification, conservation and sustainable use of biodiversity components; promote research contributing to the conservation and sustainable use of biological diversity, particularly in developing countries (in accordance with SBSTTA recommendations).
13. Public Education and Awareness	20	Promote understanding of the importance of measures to conserve biological diversity and propagate these measures through the media; cooperate with other states and organisations in developing awareness programmes.
14. Impact Assessment and Minimizing Adverse Impacts		Introduce EIAs of appropriate projects and allow public participation; take into account environmental consequences of policies; exchange information on impacts beyond State boundaries and work to reduce hazards; promote emergency responses to hazards; examine mechanisms for re-dress of international damage.
15. Access to Genetic Resources		Whilst governments control access to their genetic resources they should also facilitate access of environmentally sound uses on mutually agreed terms; scientific research based on a country's genetic resources should ensure sharing in a fair

Article No./Title	Project %	Article Description
		and equitable way of results and benefits.
16. Access to and Transfer of Technology		Countries shall ensure access to technologies relevant to conservation and sustainable use of biodiversity under fair and most favourable terms to the source countries (subject to patents and intellectual property rights) and ensure the private sector facilitates such assess and joint development of technologies.
17. Exchange of Information		Countries shall facilitate information exchange and repatriation including technical scientific and socio-economic research, information on training and surveying programmes and local knowledge
19. Bio-safety Protocol		Countries shall take legislative, administrative or policy measures to provide for the effective participation in biotechnological research activities and to ensure all practicable measures to promote and advance priority access on a fair and equitable basis, especially where they provide the genetic resources for such research.
Other Contribution		Smaller contributions (eg of 5%) or less should be summed and included here.
Total %	100%	Check % = total 100

Annex 4 Standard Measures

Code	Description	Totals (plus additional detail as required)
Training Measures		
1a	Number of people to submit PhD thesis	2
1b	Number of PhD qualifications obtained	1, 2nd due 7/09. Assisted with supervision of 8 others.
2	Number of Masters qualifications obtained	
3	Number of other qualifications obtained	
4a	Number of undergraduate students receiving training	
4b	Number of training weeks provided to undergraduate students	
4c	Number of postgraduate students receiving training (not 1-3 above)	
4d	Number of training weeks for postgraduate students	
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification(ie not categories 1-4 above)	
6a	Number of people receiving other forms of short-term education/training (ie not categories 1-5 above)	
6b	Number of training weeks not leading to formal qualification	
7	Number of types of training materials produced for use by host country(s)	1: PowerPoint presentation on bat conservation (in Chinese)
Research Measures		
8	Number of weeks spent by UK project staff on project work in host country(s)	7
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (s)	
10	Number of formal documents produced to assist work related to species identification, classification and recording.	1: online guide to Chinese bats (72 species accounts)
11a	Number of papers published or accepted for publication in peer reviewed journals	10
11b	Number of papers published or accepted for publication elsewhere	
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	
12b	Number of computer-based databases	

Code	Description	Totals (plus additional detail as required)
	enhanced (containing species/genetic information) and handed over to host country	
13a	Number of species reference collections established and handed over to host country(s)	
13b	Number of species reference collections enhanced and handed over to host country(s)	
Dissemination Measures		
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	1
15a	Number of national press releases or publicity articles in host country(s)	
15b	Number of local press releases or publicity articles in host country(s)	
15c	Number of national press releases or publicity articles in UK	
15d	Number of local press releases or publicity articles in UK	
16a	Number of issues of newsletters produced in the host country(s)	
16b	Estimated circulation of each newsletter in the host country(s)	
16c	Estimated circulation of each newsletter in the UK	
17a	Number of dissemination networks established	
17b	Number of dissemination networks enhanced or extended	
18a	Number of national TV programmes/features in host country(s)	2: 'Wild China' Interview CCTV10 Interview about new bat species CCTV10
18b	Number of national TV programme/features in the UK	1: assisted with 'Wild China' (BBC)
18c	Number of local TV programme/features in host country	
18d	Number of local TV programme features in the UK	
19a	Number of national radio interviews/features in host country(s)	
19b	Number of national radio interviews/features in the UK	
19c	Number of local radio interviews/features in host	

Code	Description	Totals (plus additional detail as required)
	country (s)	
19d	Number of local radio interviews/features in the UK	
Physical Measures		
20	Estimated value (£s) of physical assets handed over to host country(s)	
21	Number of permanent educational/training/research facilities or organisation established	2: Darwin Centre for Bat Research and adjacent Education centre, near Beijing
22	Number of permanent field plots established	
23	Value of additional resources raised for project	Matched funding provided by CAS (£30K)
Other Measures used by the project and not currently including in DI standard measures		

Annex 5 Publications

Type * (eg journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (eg contact address, website)	Cost £
Scientific paper*	**LI, G., JONES, G.,** ROSSITER, S.J., CHEN, S.F., PARSONS, S. & **ZHANG, S**. 2006. Phylogenetics of small horseshoe bats from East Asia based on mitochondrial DNA sequence variation.	Journal of Mammalogy 87: 1234-1240.		
Scientific paper*	**JONES, G.,** PARSONS, S., **ZHANG, S.,** STADELMANN, B., BENDA, P. & RUEDI, M. 2006. Echolocation calls, wingshape, diet and phylogenetic diagnosis of the endemic Chinese bat *Myotis pequinius.*	Acta Chiropterologica, 8**:** 451-464.		
Scientific paper*	THABAH, A., ROSSITER, S.J., KINGSTON , T., **ZHANG, S.,** PARSONS, S., MYA MY, K.,, ZUBAID, A., & **JONES, G** . 2006. Genetic divergence and echolocation call frequency in cryptic species of *Hipposideros larvatus* sensu lato (Chiroptera: Hipposideridae) from the Indo-Malayan region.	Biological Journal of the Linnean Society, 88: 119-130.		
Scientific paper*	THABAH, A., **LI, G.,** WANG, Y., LIANG, B., HU, K., **ZHANG, S**. & JONES, G. 2007. Diet, echolocation calls and phylogenetic affinities of the great evening bat *Ia io* (Vespertilionidae): another carnivorous bat.	Journal of Mammalogy 88**,** 728-735.		
Scientific paper*	**LI, G.,** WANG, Y., ZHAO, H., HELGEN,	Journal of Mammalogy 88:		

	K.M., LIN, L., **JONES, G. & ZHANG, S**. 2007. Echolocation calls, diet, and phylogenetic relationships of Stoliczka's trident bat *Aselliscus stoliczkanus* (Hipposideridae).	736-744.		
Scientific paper*	**LI, G**., WANG, J., ROSSITER, S.J., **JONES, G. & ZHANG, S**. 2007. Accelerated *FoxP2* evolution in echolocating bats.	PLoS ONE 2(9): e900. doi:10.1371/journal.pone.0000900.	Open access, available online at PLoS ONE website	free
Scientific paper*	ROSSITER, S.J., BENDA, P., DIETZ, C., **ZHANG, S. & JONES, G**. 2007. Rangewide phylogeography in the greater horseshoe bat inferred from microsatellites: implications for population history, taxonomy and conservation.	Molecular Ecology 16: 4699-4714 doi: 10.1111/j.1365-294X.2007.03546.x.		
Scientific paper*	**ZHANG, J**., HAN, N., **JONES, G**., LIN, L., ZHANG, J., ZHU, G, HUANG, D. & **ZHANG, S.** 2007. A new species of *Barbastella* (Chiroptera: Vespertilionidae) from north China. Journal of mammalogy 88: 1393-1403.	Journal of mammalogy 88: 1393-1403.		
Scientific paper*	**LI, G**., WANG, J., ROSSITER, S.J., **JONES, G.,** COTTON, J.A. & **ZHANG, S.** 2008.The hearing gene *Prestin* reunites echolocating bats.	Proceedings of the National Academy of Sciences, USA 105: 13959-13964		
Scientific paper*	FLANDERS, J.R., **JONES, G**., BENDA, P., **ZHANG, S.,** DIETZ, C., SHARIFI, M & ROSSITER, S.J. in press. Phylogeography of the greater	Molecular ecology, In press		

	horseshoe bat, *Rhinolophus ferrumequinum*: contrasting results from mitochondrial and microsatellite data.			
Popular Press*	**ZHANG, J.** 2007. Article about Darwin Initiative funded work	China Nature 2007 (5) 76-78.		
Popular Press*	**ZHANG, J**. 2008. The harmony between human and nature-my view in UK	Science Times 27/03/08	http://www.sciencenet.cn/dz/dznews_photo.aspx?id=3064	
Popular Press*	**JONES, G**. 2007. Batting for China	Re:search 16: 2-3	http://www.bris.ac.uk/university/publications/research/research-issue-16.pdf	free
Popular Press*	**ZHANG, J**. 2008 Beijing barbastelle-a new mammalian species in China	Forest and Humankind, (2):92-99		
Popular Press	QIAN, J (pen name of **ZHANG, J**) A new member in bat world	National Geographic Chinese version, (1):9. (news)		
Popular Press	**ZHANG, J**. 2007. We discover a new species	Beijing Sci-Tech Report, 24 December, 7(14):56		
Popular Press	CAI, W. 2007 (written by **ZHANG, J**). A new mammalian species discovered in Beijing	Beijing Evening News, 18 December.		
Popular Press	KE, W . 2008 (pen name of **ZHANG, J**). Chinese zoologists discovered a mammal species-Beijing barbastelle	Science Times, 17 December		
Popular Press	**ZHANG, J**. 2007. Chinese scientists name a new species-Beijing barbastelle	DEEP-Chinese Scientific Exploration, 12:38-39.		
Popular Press	**ZHANG, J**. 2007. Visiting bats in Fangshan	China Nature, (5):76-78		

Annex 6 Darwin Contacts

Ref No	14-008
Project Title	The Darwin Initiative Centre for Bat Conservation in China
UK Leader Details	
Name	Professor Gareth Jones
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Fax	
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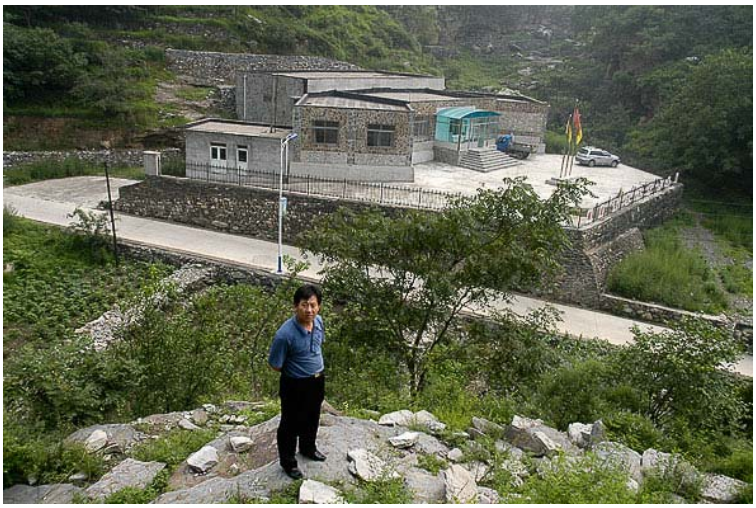

Top – the Darwin Initiative Centre for Bat Research; middle – a talk by Jinshuo Zhang to schoolchildren at the Education Centre; bottom – Barbastella beijingensis *– a bat species new to science discovered near the Darwin Centre.*