



## Darwin Initiative Annual Report



### Important note:

Completed with reference to the Reporting Guidance Notes for Project L  
expected that this report will be about 10 pages in length, excluding annexes

**Submission deadline 30 April 2011**

### Darwin Project Information

Project Ref Number	18002
Project Title	Enhancing taxonomic capacity to underpin tropical biodiversity conservation (SE Asia)
Country(ies)	Thailand, Cambodia, and Lao PDR
UK Contract Holder Institution	Harrison Institute
Host country Partner Institution(s)	Prince of Songkla University, Thailand
Other Partner Institution(s)	Royal University of Phnom Penh, Cambodia; National University of Laos, Lao PDR
Darwin Grant Value	£189,895
Start/End dates of Project	April, 2010-October, 2013
Reporting period (1 Apr 200x to 31 Mar 200y) and annual report number (1,2,3..)	1 April, 2010-31 March, 2011
Project Leader Name	Paul Bates
Project website	<a href="http://www.harrison-institute.org/research/CRM_R3_Darwin_taxonomic%20network.html">http://www.harrison-institute.org/research/CRM_R3_Darwin_taxonomic%20network.html</a>
Author(s) and main contributors, date	Paul Bates and Harrison team, UK; Dr Chutamas Satasook, Thailand; Dr Neil Furey, Cambodia

### 1. Project Background:

The project seeks to address the shortage of taxonomic capacity in mainland SE Asia by developing:

- the Prince of Songkla University (**PSU**), Hat Yai, Thailand (7°00'N 100°28'E) as a national and international centre of excellence in taxonomic research and training in Old World tropical biodiversity. This is to be achieved by (1) training two staff members to PhD level and one student to MSc level (in taxonomic research methods of mammals and birds); (2) facilitating international collaboration for other staff members working on the taxonomy of different faunal groups (amphibians, entomology and palaeontology); (3) hosting international training workshops and conferences; (4) promoting field research; (5) enhancing research collections and (6) providing an extensive digital library of taxonomic/ecological papers and books in pdf format.
- regional taxonomic capacity in two collaborating institutions, the Royal University of Phnom Penh (**RUPP**) in Cambodia (11°35'N 104°55'E) and the National University of Laos (**NUoL**) in Lao PDR (17°59'N 102°38'E) by (1) training one member of staff from

each institution to PhD level; (2) encouraging other staff/students of RUPP and NUoL to participate in Darwin field studies and training workshops; (3) developing regional and international academic linkages; (4) enhancing research collections and (5) providing access to digital libraries of taxonomic/biodiversity publications

- an international on-line taxonomic network, the *Afro-Asian Taxonomic Network*, linking institutions and individuals working on aspects of taxonomy in mainland SE Asia with experts and other students worldwide (Fig. 1).



Fig. 1. *Afro-Asian Taxonomic Network* website [www.harrison-institute.org/afro\\_asian/index.html](http://www.harrison-institute.org/afro_asian/index.html) was launched in January, 2011 to promote taxonomic research in SE Asia and throughout the Old World tropics.

## 2. Project Partnerships

The Harrison Institute is the lead institution in the UK. It has a close and longstanding relationship with the Prince of Songkla University (PSU), Thailand, which is the lead institution in SE Asia. During the first year of the project (2010-2011), outputs of this partnership included:

- Training and co-supervision of three PhD students at PSU - Mr Pipat Soisook from PSU, Thailand, Mr Ith Saveng from RUPP, Cambodia, and Mr Bounsavane Douangboubpha from NUoL, Lao PDR – all studying aspects of bat taxonomy (details of the students, including those below, can be accessed through [www.harrison-institute.org/research/CRM\\_R3\\_Darwin\\_taxonomic%20network.html](http://www.harrison-institute.org/research/CRM_R3_Darwin_taxonomic%20network.html) )
- Co-supervision of one PhD student, Ms Ariya Dejtaradol, from PSU, studying bird taxonomy at the University of Ulm, Germany with field work in SE Asia
- Training and co-supervision of one MSc student, Ms Uraiporn Pimsai, from PSU who is studying rodent taxonomy



Fig. 2. Some of the 46 attendees from 8 countries who took part in the bird workshop hosted at PSU in July, 2010 - the workshop included 14 presentations and a day of practical training.

- Co-hosting two workshops, one on bat echolocation, GIS, and computer mapping in July, 2010 and one on bird research and conservation in October, 2010 (Figs. 2 & 8)
- Co-authoring and publishing 4 scientific papers (for details see Table 2)
- Co-writing the Afro-Asian Taxonomic Network website [www.harrison-institute.org/afro\\_asian/index.html](http://www.harrison-institute.org/afro_asian/index.html) (see page 2 of this report) (Fig. 1).

Harrison Institute (**HI**) management structure: there are four staff members working on the project, Dr Paul Bates is the project co-ordinator and is responsible for all aspects of the project, especially those relating to project design, the supervision of students, and ensuring that tasks are completed on time; Dr Nikky Thomas is an academic supervisor of the students

and researcher; Mr Malcolm Pearch's primary role is the administration of the project but is also involved in various aspects of the research; Beatrix Lanzinger is compiling the digital library, which currently includes 1728 pdfs.

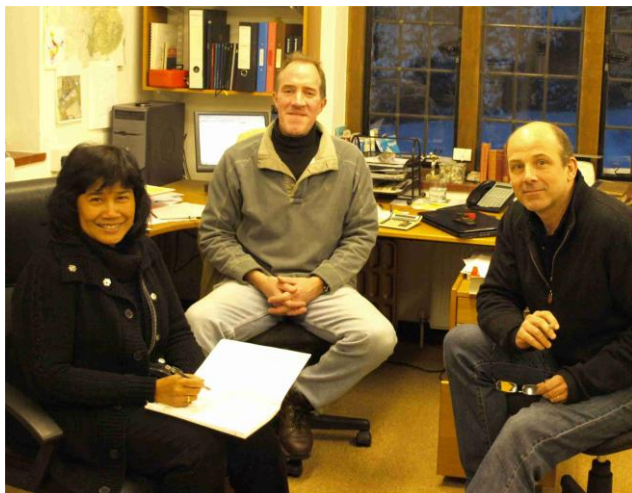


Fig. 3. In November, 2010, Dr Chutamas Satasook, Dean of Science of Prince of Songkla University (PSU) and co-ordinator of the project in Thailand visited the Harrison Institute for discussions with Malcolm Pearch (centre) and Dr Paul Bates (right).

Prince of Songkla University (**PSU**) management structure: Dr Chutamas Satasook, Dean of Science and Director of the Natural History Museum (Fig. 3) is the coordinator of the project (budget and overall supervision) at PSU; Dr Sara Bumrungsri is responsible for the supervision of three PhD and one MSc student at PSU.

Dr Swen Renner at the University of Ulm is responsible for the supervision of the fourth PhD student, who is partly based in Germany for training and academic supervision and partly in SE Asia for field research.

Royal University of Phnom Penh (**RUPP**) management structure: Dr Neil Furey of Fauna & Flora International (FFI Cambodia) co-supervises Ith Saveng, the PhD student from RUPP. Neil also co-ordinates field work in Cambodia and provides a link with senior members of the academic staff of RUPP.



Fig. 4. Dr Nikky Thomas of the Harrison Institute with Dr Sara Bumrungsri (far left) and Pipat Soisook (left) of the Prince of Songkla University (PSU) on a field trip in peninsular Thailand in October, 2010

National University of Laos (**NUoL**) management structure: currently there is no interaction with senior members of NUoL. All planning is carried out through the NUoL PhD student, Mr Bounsavane Douangboubpha.

In general, the management structure works well. It relies on personal contact (primarily visits to SE Asia by Paul Bates, Nikky Thomas, and Malcolm Pearch), telephone conversations and e-mail. In 2011, we intend to develop a closer relationship with senior members of NUoL to ensure that the best possible results are obtained in Lao PDR.

The project has developed new links and enhanced existing ones. These include:



- In the UK, a supporting partnership with the Natural History Museum, Tring for hosting a month-long student study visit by Darwin student Ms Ariya Dejtaradol in March, 2011
- In the USA with Texas Tech University for a 5 year project, which includes as one of its four priority areas the taxonomy of SE Asian bat species - this project, which is supported by the National Science Foundation, commenced in March, 2011  
<http://www.nsf.gov/awardsearch/showAward.do?AwardNumber=1051363>
- In Malaysia, with SEABCRU (SE Asian Bat Conservation & Research Unit) for training in bat ecology. Darwin student Ith Saveng joined a course in Krau Wildlife Reserve in May, 2010. His participation was jointly supported by SEABCRU, the Critical Ecosystems Partnership Fund and the Darwin (Fig. 5).
- In Hungary for hosting a student study visit by Darwin student Pipat Soisook in August, 2010 to the mammal collection of the Hungarian Natural History Museum; also field training of Ith Saveng in Cambodia in February, 2011
- In Poland, for training Dr Nikky Thomas in 3-dimensional morphometric modelling at the Museum and Institute of Zoology, Polish Academy of Sciences 30 January to 4 February, 2011.
- In Vietnam for developing collaboration in taxonomic research with the Vietnam-Russia Tropical Centre (part of the Severtsov Institute of Ecology and Evolution/ Russian Academy of Sciences)
- In Cambodia, with Fauna & Flora International (Darwin projects 14-037 and EIDPO028) and the Critical Ecosystems Partnership Fund for co-developing taxonomic capacity within the Royal University of Phnom Penh
- In Myanmar, with the University of Mandalay to promote trans-border taxonomic research and training (Fig. 6).

The project has a link with the Thailand CBD focal point, Dr Sirikul Bunpaong, and is supporting Thailand, Cambodia, and Lao PDR to meet their commitments to the CBD by teaching skills directly relevant to Articles 7, 12, 13, 17, and 18 and the Global Taxonomy Initiative of the CBD.

**BirdLife International in Indochina**  
The Babbler 34 - July 2010



Bat ecological training in Krau Wildlife Reserve, Malaysia. Photo: Ith Saveng  
Right: Lesser False Vampire *Myotis spasma*. Photo by: Gabor Csorba

**Project Progress in Cambodia**

In this quarter, capacity building has been in the forefront of the Cambodian bat project entitled "Increasing in-country capacity and regional co-operation to promote bat conservation in Cambodia with particular reference to *Otomops wroughtoni*" implemented by Harrison Institute ([www.harrison-institute.org](http://www.harrison-institute.org)). In May, Mr Ith Saveng, of the Centre of Biodiversity Conservation, the Royal University of Phnom Penh (RUPP) won a scholarship to study ecological techniques for bat research in Krau Wildlife Reserve, Malaysia. He was also enrolled for a PhD in bat taxonomy and conservation at the Prince of Songkla University, Thailand as part of a UK sponsored Darwin Initiative project. Meanwhile, also at RUPP, Mr Phauk Sophany commenced his MSc thesis on aspects of bat echolocation. Both students are fortunate to have received extensive training, as part of the CEPF project, from international experts Dr Neil Furey of FFI Cambodia and Dr Gabor Csorba of the Hungarian Natural History Museum. Results of the field survey to Ratanakiri Province (February, 2010) are currently being written up and include a number of new records of bats for Cambodia as well as two putative new species to science.

Research on Bengal Florican *Houbaropsis bengalensis* in Kompong Thom Province, Cambodia continues with a third season of fieldwork now completed. The collaborative

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Fig. 5. Darwin PhD student Ith Saveng of RUPP (far right) took part in an ecological training workshop in Malaysia in May, 2010, supported by SEABCRU, CEPF, and Darwin.



Fig. 6. Dr (Ms) Moe Moe Aung of the University of Mandalay (centre) learning taxonomic research methods from Pipat Soisook of PSU (front right). Also present are Ith Saveng (RUPP) (back left) and Mr Pushpa from Nepal (back centre).

### 3. Project progress/ 3.1 Progress in carrying out project activities

**Output 1 – the development of the Prince of Songkla University (PSU) as a centre for taxonomic training.** This has proceeded per schedule and with many additional outputs and activities.

Indicator 1 (all activities as planned) - All four PhD students and one additional MSc student have:

- (1) finalised their research topics and appointed local and international supervisors
- (2) collated literature and commenced gathering data in the field (in Cambodia and Thailand) and in Museum collections (Germany, Hungary, Thailand and UK)
- (3) have taken part in training programmes in field, laboratory and museum techniques in Cambodia, Germany, and Thailand
- (4) have their own dedicated websites accessed through [www.harrison-institute.org/research/CRM\\_R3\\_Darwin\\_taxonomic%20network.html](http://www.harrison-institute.org/research/CRM_R3_Darwin_taxonomic%20network.html)

Indicator 2 (activities considerably exceed plans) - Darwin project staff and students have already published

- (1) three taxonomic papers in international journals with Darwin students as first author (Fig. 7)
- (2) have contributed as co-authors to one other scientific paper
- (3) Paul Bates, the project co-ordinator, has written one editorial and two articles outlining (*inter alia*) the aims and scope of the Darwin project (available at [www.harrison-institute.org/STUK1\\_Harrison\\_Inst\\_PRO\[1\].pdf](http://www.harrison-institute.org/STUK1_Harrison_Inst_PRO[1].pdf) and [www.harrison-institute.org/2\\_STUK1\\_P\\_Bates\\_ATL\[1\]final.pdf](http://www.harrison-institute.org/2_STUK1_P_Bates_ATL[1]final.pdf) )



Fig. 7. One of four papers on bat taxonomy authored by Darwin students in 2010-2011, three of which (including the above example) are first authored by the students. All are published in international journals (see Table 2).

Indicator 3 (activities as planned) - PSU hosted two international workshops relating to the Darwin project, namely:

- (1) a training workshop in collaboration with the University of Bristol on bat echolocation, GIS, and computer mapping (26-28 July, 2010)
- (2) a bird workshop, *Bird research and conservation in SE Asia*, (lectures and practicals) with 14 speakers from nine universities and institutes in Asia, Africa and Europe (21-22 October, 2010). The 46 attendees from eight countries included students from a range of universities in

Thailand; members of the Nan Bird Club (Thailand); the Natural History Museum, Thailand; and those representing the Thai conservation community (Figs. 2 & 10)

(3) in addition, PSU, Harrison Institute, and Ulm University are currently planning the First International SE Asian Ornithological Congress, which will be held in Phuket, Thailand in November, 2012

Indicator 4 (size of library already exceeds plans) - A digital library of taxonomic papers and books for PSU, NUoL and RUPP is being compiled at the Harrison Institute and as of the 13 April included 1728 pdfs.

## Output 2 – developing a SE Asian Taxonomic Network

Indicator 1 (scope of Network considerably exceeds plans) – in January, 2011 we launched a website ‘Afro-Asian Taxonomic Network’ [www.harrison-institute.org/afro\\_asian/index.html](http://www.harrison-institute.org/afro_asian/index.html) . It is primarily targeted at a new generation of taxonomists working in the Old World tropics.

Amongst other things it includes:

(1) an interactive ‘*Forum*’ for discussion (2) a list of workshops and conferences that may be of interest to taxonomists in the region; (3) a membership list of taxonomists to promote collaboration [www.harrison-institute.org/afro\\_asian/network\\_members.html](http://www.harrison-institute.org/afro_asian/network_members.html) – in the first three months it has attracted 80 members from 24 countries – in addition a *Facebook* page to promote dialogue about taxonomy is available at [www.facebook.com/pages/Harrison-Institute-Centre-for-Biodiversity-Research/193357067346886](http://www.facebook.com/pages/Harrison-Institute-Centre-for-Biodiversity-Research/193357067346886)

Indicator 2 (activity on target but being monitored) – an MoU is now in place, at University level, between PSU and NUoL. National political tensions have affected the proposed MoU between PSU and the Royal University of Phnom Penh this has not affected the running of the project.

Indicator 3 (activities as planned) – student exchanges currently include:

(1) two PhD students, one from Cambodia and one from Lao PDR, currently conducting their PhDs in PSU, Thailand; one student from Thailand currently carrying out her PhD in Germany/SE Asia

(2) field surveys, including Thai, Lao, Cambodian (and Myanmar) students have been carried out in Thailand; others are planned for Lao PDR and Myanmar for 2011 [www.harrison-institute.org/Harrison%20Institute%20schedule%202011-2012.pdf](http://www.harrison-institute.org/Harrison%20Institute%20schedule%202011-2012.pdf)

Indicator 4 (activities exceeding plans) – as outlined above, two international workshops have been hosted and four scientific papers and one editorial published in international journals and two articles published in Public Service Review



Fig. 8. Pipat Soisook presented a paper on the taxonomy of horseshoe bats at the 15<sup>th</sup> International Bat Research Conference in Prague in August, 2010. Subsequently he travelled to Budapest to study the collections of the Hungarian Natural History Museum.

Indicator 5 (activities greatly exceeding plans) – nine presentations about the Darwin project have been made in Czech Republic (x2), Thailand (x4), Germany, United Kingdom, and Zambia (for details see Annex 3).



### Output 3 – outreach to the conservation community

Indicator 1 (activities as planned) – representatives of the conservation community joined the Darwin bird workshop hosted by PSU in October, 2010. They included individuals from the Khao Banthat Wildlife Sanctuary, Patthalung; Protected Area Regional Office, Songkla; and Nan Bird Club, all in Thailand. There was also a representative from FFI Cambodia and from Birdlife International (SE Asia office, based in Vietnam).

Indicator 2 (not originally planned) – as noted above, two articles were published in Public Service Review (this has a target audience of senior political figures, such as the Secretary of State for the Environment and senior UK and foreign academics). An editorial stressing the importance of taxonomy for conservation planning was published in the Cambodian Journal of Natural History.

#### 3.1 Progress towards Project Outputs

First year progress towards meeting the project’s outputs are outlined in 3.1 above. Most of the indicators are quantifiable and indicate that progress towards project outputs are either currently being met or exceeded. All assumptions currently hold true.

#### 3.2 Standard Measures

**Table 1 Project Standard Output Measures**

Code No.	Description	Year 1 Total	Number planned for this reporting period	Total planned from application
1A	Pipat Soisook (Thai), Ms Ariya Dejtardol (Thai), Bounsavane Douangboubpha (Lao) & Ith Saveng (Cambodia) to submit thesis for PhD qualification at the end of the project – for details see <a href="http://www.harrison-institute.org/research/CRM_R3_Darwin_taxonomy%20network.html">www.harrison-institute.org/research/CRM_R3_Darwin_taxonomy%20network.html</a>	4	4	4
1B	Number of people to attain PhD qualification (in host country) (see above)	4	4	4
2	Ms Uraiporn Pimsai to attain Masters qualification (MSc, MPhil etc) – see <a href="http://www.harrison-institute.org/research/UraipornPimsai.html">www.harrison-institute.org/research/UraipornPimsai.html</a>	1	0	0
4A	Number of undergraduate students to receive (detailed) training – in addition, a number of undergraduates have already attended our two workshops hosted at PSU	1	0	2

4B	Number of training weeks to be provided	0	0	20
4C	Five postgraduate students to receive detailed training –others have attend our two workshops	5	4	4
4D	Number of training weeks to be provided – this is an ongoing process- starting in April, 2010 and ending in October, 2013	52	52	150+
6A	Number of people to receive other forms of education/training (which does not fall into categories 1-5 above) - this includes training for staff working for conservation organisations – 2010-2011 included staff from Khao Banthat Wildlife Sanctuary (x1); Protected Area Regional Office, Songkla, Thailand (x2)	3	3	5
6B	Number of training weeks to be provided	1	1	3
7	Number of (ie different types - not volume - of material produced) training materials to be produced for use by host country -	1	1	1
8	Number of weeks to be spent by UK project staff on project work in the host country	9	9	27
10	Number of individual field guides/manuals to be produced to assist work related to species identification, classification and recording	0	0	3
11A	Taxonomic papers already published this year by Darwin students and staff in peer reviewed journals	4	0	4
11B	Taxonomic papers submitted this year by Darwin students and staff to peer reviewed journals	2	0	0
12A	Taxonomic pdf Library is being compiled (currently with 1728 papers and books); regular updates will be given to host country institutions during the project	1	1	1
12B	Museum catalogues of specimens held in host country collections (Prince of Songkla University) to be <b>enhanced</b> during the	1	1	3



	project			
13A	Species reference collections in the National University of Laos to be <b>established</b>	1	1	1
13B	Species reference collections in the Prince of Songkla University and Royal University of Phnom Penh to be <b>enhanced</b>	2	2	2
14A	International conferences/seminars/workshops to be <b>organised</b> to present/disseminate findings	2	2	6
14B	Number of conferences/seminars/workshops <b>attended</b> at which findings from Darwin project work will be presented/disseminated.	4	1	3
15A	Number of national press releases in host country(ies)	0	0	3
15C	No national press releases in UK but two articles published in Public Service Review	2	0	1
16A	There are 2 <b>websites</b> for the project – one about the project <i>per se</i> <a href="http://www.harrison-institute.org/research/CRM_R3_Darwin_taxonomic%20network.html">www.harrison-institute.org/research/CRM_R3_Darwin_taxonomic%20network.html</a> and one concerning the taxonomic network <a href="http://www.harrison-institute.org/afro_asian/index.html">www.harrison-institute.org/afro_asian/index.html</a>	2	2	2
16B	Estimated circulation of the <b>websites</b> in the host country(ies) – I am not sure - is it possible to distinguish 'hits' from the world as opposed to the UK?	?	?	?
16C	Estimated circulation of the <b>websites</b> in the UK	?	?	?
17A	The 2 websites together with the publications (papers, reports and editorials) are the primary dissemination networks to be <b>established</b>	2+	2+	2+
18C	Number of local TV programmes/features in host country(ies)	0	0	2
19A	Number of national radio interviews/features	0	0	2

	in host county(ies)			
19C	Number of local radio interviews/features in host country(ies)	0	0	1
20	Estimated value (£'s) of physical assets to be handed over to host country(ies)	2850 (£)	2850 (£)	6320 (£)
21	The taxonomic facilities at the Prince of Songkla University and Royal University of Phnom Penh are to be enhanced. They are to be established at the National University of Laos – this is an on-going process of the project	3	3	3
23	In addition, to substantial contributions in kind from the Harrison Institute and the Prince of Songkla University, during the 1 <sup>st</sup> year, the Darwin received additional grants from – SYNTHESIS (£5700); J.D. & C.D. MacArthur Foundation (£650). Field work and training in Cambodia was co-sponsored by the Critical Ecosystems Partnership Fund (CEPF) (£1400) and Conservation International training of Darwin student in Ith Saveng was co-supported by SEABCRU and CEPF (approx £800); Darwin project staff and students are also part of a \$499,362 grant entitled <i>RCN SEABCRU: the SE Asian Bat Conservation Research Unit</i> which was awarded on 25 March, 2011 by the National Science Foundation, USA	36273 (£) in kind Plus grants of £8850	36273 (£)	131079 (£)
New - Project specific measures				

**Table 2 Publications**

Type (eg journals, manual, CDs)	Detail (title, author, year), city	Available from Cost £
Journal Taxonomic paper	<b>Douangboubpha, B., S. Bumrungsri, P. Soisook, C. Satasook, N. M. Thomas, and P.J.J. Bates.</b> 2010. A taxonomic review of the <i>Hipposideros bicolor</i> species complex and <i>H. pomona</i> (Chiroptera: Hipposideridae) in Thailand. <i>Acta Chiropterologica</i> , 12(2): 415-438. (Warsaw)	Harrison Institute Free for personal use
Journal	<b>Douangboubpha, B., S. Bumrungsri, P. Soisook,</b>	As above

Taxonomic paper	S.W. Murray, S.J. Puechmaille, <b>C. Satasook</b> , D.L. Harrison, and <b>P.J.J. Bates</b> . 2010. A taxonomic review of <i>Hipposideros halophyllus</i> , with additional information on <i>H. ater</i> and <i>H. cineraceus</i> (Chiroptera: Hipposideridae) from Thailand and Myanmar. <i>Acta Chiropterologica</i> , 12(1): 29–50.	
Journal Taxonomic paper	<b>Soisook, P.</b> , P. Niyomwan, M. Srikrachang, T. Srithongchuay, and <b>P.J.J. Bates</b> . 2010. Discovery of <i>Rhinolophus beddomei</i> (Chiroptera: Rhinolophidae) from Thailand with a brief comparison to other related taxa. <i>Tropical Natural History</i> 10(1): 67-79. (Bangkok, Thailand)	As above
Journal Scientific paper	Hughes, A. C., <b>C. Satasook</b> , <b>P.J.J. Bates</b> , <b>P. Soisook</b> , T. Sritongchuay, G. Jones, and <b>S. Bumrungsri</b> . 2010. Echolocation call analysis and presence-only modelling as conservation monitoring tools for rhinolophoid bats in Thailand. <i>Acta Chiropterologica</i> , 12(2): 311-327.	As above
Journal Editorial	<b>Bates, P.J.J.</b> (2010) Taxonomy and conservation go hand in hand (editorial). <i>Cambodian Journal of Natural History</i> , 2010(2): 83-85. Phnom Penh.	As above
Journal Article	<b>Bates, P.J.J.</b> 2010. A tropical discussion. <i>Public Service Review, UK Science and Technology</i> , 1: 115	As above
Journal Article	<b>Bates, P.J.J.</b> 2010. The science of understanding and describing the diversity of nature. <i>Public Service Review, UK Science and Technology</i> , 1: 116.	As above
	Authors who are members of the Darwin project (staff and students) are highlighted in bold.	

### 3.3 Progress towards the project purpose and outcomes

The purpose of the project is to enhance taxonomic capacity in SE Asia by developing a university-based, taxonomic training centre of international standard in Thailand and a regional taxonomic network with collaborating institutions in Cambodia and Lao PDR. The assumptions hold true and we feel we have made good progress towards this objective.

We are especially pleased in respect of Thailand, where in addition to our own work in developing taxonomic capacity, through the activities of the Darwin, other linkages have been made. For example

(1) through a delegate, Jonathan Eames, who attended the Bird Workshop in October, 2010, the Prince of Songkla University (PSU) has now been in discussion about future collaboration in the biodiversity sciences with the Vietnam-Russian Tropical Centre in Hanoi, part of the Severtsov Institute of Ecology and Evolution ([www.sevin.ru](http://www.sevin.ru)) and Russian Academy of Sciences. The Tropical Centre is keen to collaborate on a range of projects including entomology,



Fig. 9. Darwin student Bounsavane Douangboubpha published two papers in 2010-11 in an international journal on aspects of the taxonomy of leaf-nosed bats.



hydrobiology, ornithology and the study of the herpetofauna, forest ecology and small mammals.

(2) through working on bird taxonomy with the University of Ulm, PSU and Ulm have jointly submitted a three year grant proposal (DFG-Erstrantrag) for 100,000 euros for a project on birds in peninsular Thailand.



Fig. 10. Darwin student Ariya Dejaradol, together with Dr Swen Renner of the University of Ulm giving a practical demonstration of bird taxidermy at the bird workshop held in PSU in October, 2010. Dr Renner is in conversation with Jonathan Eames (centre, back) of Birdlife International SE Asia.

(3) PSU together with Harrison Institute are part of 5 year (\$499,362) project funded by the National Science Foundation and administered by Dr Tigga Kingston of Texas Tech University. The project, entitled '*RCN SEACRU: The Southeast Asian Bat Conservation Research Unit*', has four priority areas, one of which is bat taxonomy and systematics.

In March, 2011 in Cambodia, in addition to training Royal University of Phnom Penh Darwin PhD student, Ith Saveng, linkages were further enhanced with the Hungarian Natural History Museum, Fauna & Fauna International, and Darwin Projects 14-037 and EIDPO028 through a field research project in Prear Vihear, which was co-sponsored by the CEPF (Critical Ecosystem Partnership Fund), Conservation International and our current Darwin.

With respect to the National University of Laos, the first phase of developing the university collections took place. In June, 2011, a collaborative field survey (Lao/Thai/Cambodian/ UK) including capacity building of two additional post-graduate students from the National University of Laos, is planned for the limestone karst areas of central Lao.

### **3.5 Progress towards impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits**

This is not a conservation project *per se*. However, the project is aimed at developing taxonomic capacity in the biodiversity rich tropics in order to provide national centres of biodiversity expertise, which can assist governments and conservation NGOs meet their obligations to the CBD by helping to:

- (1) identify, describe, and document the biodiversity of the ecosystems
- (2) support the work of conservationists by advising on species and site-based conservation priorities
- (3) monitor biodiversity loss from the impacts of climate change, habitat fragmentation, spread of invasive alien species
- (4) assist with the enforcement of CITES

- (5) support environmental impact assessments
- (6) assist with the dissemination of biodiversity information and public outreach programmes.

#### 4. Monitoring, evaluation and lessons

Project activities and outcomes are monitored against the project timetable (Section 18 of the application). In addition, many of the outcomes are quantifiable and/or tangible assets. These include published taxonomic papers, articles and editorial, which together with presentations, including those for these defence, are indicative of the progress and activities of Darwin staff and students. Websites are quantifiable and the quality can be assessed through the response of users. Workshops are quantifiable both in terms of numbers and in terms of numbers of presenters and attendees; field studies are quantifiable and the quality can be assessed in terms of useful data collected; and the taxonomic library is quantifiable in terms of numbers of pdfs. No major changes to M&E process are currently planned.

During the first year there were no unexpected major lessons learned. As always, such a project requires total commitment and the constant encouragement of all participants.

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

First year project with no previous reviews.

#### 6. Other comments on progress not covered elsewhere

The project is being carried out essentially as it was designed in the application. However, within the existing structure of the project, we have expanded the outputs, so for example instead of setting up a membership list for the Taxonomic Network which will include only SE Asian taxonomists we have also included taxonomists from throughout the Old World tropics. This makes sense since:

- (1) PSU (together with the Harrison Institute) has a future ambition to become a centre of taxonomic training and research not just for SE Asia but for the Old World tropics (Fig. 11)
- (2) many of the international taxonomists who are currently listed are interested in both regions
- (3) many of the taxa (at genus level and above) are found in both Africa and Asia
- (4) both regions share common problems such as a lack of training for taxonomists, scientific isolation, and a lack of literature.
- (5) to expand the Network to both regions requires little extra effort and ultimately will have greater benefits for young taxonomists throughout the Afro-Asian region.



Fig. 11. Dr Jacob Mwitwa (centre) of the Copperbelt University, Zambia joined the bird conference in PSU. Ultimately, it is anticipated that PSU will become a centre of taxonomic training not just for SE Asia but for the Old World tropics and as such the Darwin project is seeking to develop training and research links between the continents.

In terms of method, we have refined the method of making a pdf library by using a fast-feeding scanner and doing more of the work at the Harrison Institute.

Currently the project does not face any particular risks.

#### 7. Sustainability

The profile of the project within SE Asian biodiversity community has been promoted by inviting key members of the scientific and conservation communities of Thailand, Cambodia, and Vietnam to take part in the workshop hosted by PSU in October, 2010. In addition we raised the international profile by inviting delegates from Germany, UK, and Zambia (to show the applicability of Asian solutions to African problems) (Fig. 11).

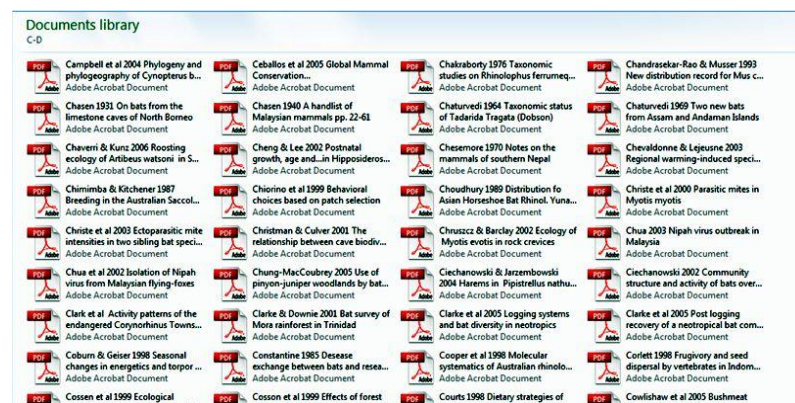


Fig. 12. Beatrix Lanzinger of the Harrison Institute is compiling a digital library of pdfs for taxonomists in SE Asia. This resource will be invaluable for future taxonomic research in the region.

We feel that sustainability is a strong aspect of the project.

All four PhD students are staff members of their respective universities (with guaranteed employment on completion of their studies) and are developing strong mutually supporting academic, research and training links.

Through the project, the PSU has already made many useful links with other organisations concerned with taxonomy and biodiversity, including (as outlined above) Texas Tech University, USA; the Severtsov Institute of Ecology and Evolution, Russia, and the University of Ulm, Germany and has, or is in the process of, applying for extra funding for additional project work. In addition, PSU and RUPP and NUoL have developed links with other supporting organisations such as the Hungarian Natural History Museum and RUPP with Conservation International and Fauna & Flora International. We will concentrate on developing more capacity in the NUoL during the period 2011-2012.

The Harrison Institute has a long term commitment to work with all three host countries organisations in SE Asia and has been doing so since 2005. On the completion of the Darwin further work will continue with a range of other grants. However, irrespective of this, project members will have developed sufficient skills and additional national and international scientific linkages to maintain and expand their taxonomic research and training.

## 8. Dissemination

Dissemination activities within SE Asia took place at

- (1) two international workshops hosted at PSU in Thailand
- (2) two presentations which were made at the Association of Tropical Biology and Conservation meeting 'The Biodiversity Crisis in tropical Asia' which took place in Bangkok, 12-15 March, 2011.
- (3) through open access websites, including that for the Taxonomic Network - to date 33 students and staff interested in taxonomy based in Thailand (27), Cambodia (5) and Lao (1) have become members.

Currently, target audiences are the scientific and conservation communities. It is anticipated that there will be an on-going process of taxonomic research and training in future years with



the Harrison Institute and other collaborating institutions, leading to further dissemination activities.

## 9. Project Expenditure

**Table 3 Project expenditure during the reporting period (Defra Financial Year 1 April 2010 to 31 March 2011)**

Item	Budget (please indicate which document you refer to if other than your project application or annual grant offer letter)  <b>PA – Project application</b>  <b>BA – Budget amendment</b>  (BA approved on 03.02.2011).	Expenditure	Variance
<b>STAFF COSTS</b>			
<b>Salaries (specify by individual)</b>			
Paul Bates (a)			
Nikky Hammond (b)			
Beatrix Lanzinger (c)			
Bounsavane			
Douangboubpha (d)			
<hr/>			
<b>OVERHEAD COSTS</b>			
<b>Overhead costs (U.K.)</b>			
<b>(a)</b>			
<b>Overhead costs (host countries) (b)</b>			
<hr/>			
<b>TRAVEL &amp; SUBSISTENCE</b>			
<b>Travel &amp; subsistence (U.K.) (a)</b>			
<b>Travel &amp; subsistence (host countries) (b)</b>			
<hr/>			
<b>OPERATING COSTS</b>			
<b>Operating costs (host countries)</b>			
<hr/>			
<b>CAPITAL EQUIPMENT</b>			

<b>Capital equipment (host countries)</b>	
<b>OTHER COSTS</b>	
<b>Other costs (host countries)</b>	
TOTAL	
Sum received to date	
Sum outstanding	

**10. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes**

I agree for LTS and the Darwin Secretariat to publish the content of this section

The project is proud of the spirit of co-operation it has engendered amongst sections of the scientific community in SE Asia. Darwin students from Thailand, Lao PDR, and Cambodia, together with their colleagues from Myanmar and Vietnam, work together in a spirit of harmony and mutual support.

Field studies are multi-national and all four scientific publications are multi-authored. This sense of community has led to a rapid development of skills within the group and has ensured that outputs are comprehensive and scientifically rigorous.

We are also extremely pleased that the team has built new and strong links with other institutions in Germany, Hungary, Malaysia, Myanmar, and Vietnam and is currently developing links with other prestigious organisations in Russia and the USA.

Ultimately, we feel that it will not only be possible to develop the Prince of Songkla University as a training centre for taxonomy within Southeast Asia but also, in the future, working with the Harrison Institute and others, it can become an international centre of biodiversity expertise, training scientists and students from throughout the Old World tropics.

## Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2010-11

Project summary	Measurable Indicators	Progress and Achievements April 2010 - March 2011	Actions required/planned for next period
<p><b>Goal:</b> <i>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</i></p> <p><i>The conservation of biological diversity,</i></p> <p><i>The sustainable use of its components, and</i></p> <p><i>The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources</i></p>		<p><i>We have drawn on UK expertise and worked extensively with local partners in SE Asia. We have built in-country capacity to help provide national (and international) centres of biodiversity expertise that will facilitate governments to fulfil their obligations to the CBD, CITES and IUCN initiatives</i></p>	<p><i>(do not fill not applicable)</i></p>
<p><b>Purpose</b> To enhance taxonomic capacity in SE Asia by developing a university-based, taxonomic training centre of international standard in Thailand and a regional taxonomic network with collaborating institutions in Cambodia and Lao PDR</p>	<p>PSU, RUPP and NUoL have:</p> <p>Qualified staff (PhD is a minimum requirement of university regulations) to:</p> <p>(1) supervise future MSc/PhD students in taxonomy</p> <p>(2) teach a taxonomic training course to under-/postgraduates</p> <p>(3) conduct taxonomic research.</p> <p>Functional and utilised research collections and libraries for taxonomic studies</p>	<p>4 students from Thailand, Lao PDR, Cambodia are conducting taxonomic PhDs; 1 student is conducting a taxonomic MSc</p> <p>Research collections have been enhanced in PSU and RUPP and established in NUoL</p> <p>Darwin students and staff have published 4 taxonomic papers in international journals</p>	<p>Darwin students continue their PhD research</p> <p>Further field studies are carried out by Darwin students</p> <p>Further papers are published by the Darwin team</p> <p>The digital library is expanded to</p>



		Digital libraries being utilised by staff and students	include more pdf papers and books
<b>Output 1.</b> A centre for taxonomic training and research based in the Natural History Museum and Department of Biology, Prince of Songkla University (PSU).	PSU to become an international centre for taxonomic research and training	During the year, PSU has not only trained its own students in taxonomy but also those from Lao and Cambodia. In addition, it has become part of a NSF grant (\$499,362) administered by Texas Tech University, USA and is working with the University of Ulm, Germany and the Vietnam-Russia Tropical Centre of the Severtsov Institute of Ecology, Russia on a range of other possible collaborative research and training projects	
Activity 1. Training for under- and post-graduates, especially four trainees (staff members of PSU, RUPP, & NUoL) to conduct taxonomic PhDs (to be completed in 2013)	Currently 4 students from Thailand, Lao PDR, Cambodia are conducting taxonomic PhDs; one student is conducting a taxonomic MSc – good progress. Undergraduates have attended training workshops at PSU.		
Activity 1.2 Four taxonomic publications.	Darwin students and staff have already published 4 taxonomic papers in international journals - originally, this was the target for the 3 year period		
Activity 1.3 PSU to host training workshops on field, laboratory, and museum techniques (& ethical collecting policy) open to all students.	Two training workshops hosted by PSU (July, 2010 & October, 2010) – open to all students with international expert contributors		
Activity 1.4 PSU to host an international conference on SE Asian taxonomy and zoogeography open to all.	PSU planning to host the First International SE Asian Ornithological Congress. To be held in Phuket in November, 2012, it will include taxonomy and phylogeography		
Activity 1.5 Enhanced taxonomic libraries and research collections.	Research collections enhanced in PSU and RUPP and established in NUoL; digital library currently comprises 1728 pdfs		

<p><b>Output 2.</b> A SE Asian Taxonomic Network including PSU in Thailand, RUPP in Cambodia and NUoL in Lao PDR (to be subsequently expanded throughout the region).</p>	<p>Network members work in collaboration for training and research</p>	<p>An academic network is being developed in SE Asia with PhD students from Cambodia and Lao PDR being trained in Thailand. This network also includes staff and students from Vietnam and Myanmar. Workshops, publications, field studies....are collaborative and multi-national</p>
<p>Activity 2.1. MoUs and protocols supporting: student exchanges for training and research; trans-boundary field studies and specimen loans; joint hosting of workshops and conferences; joint publications in international journals.</p>		<p>An MoU has been signed at university level between PSU and NUoL. Students from Cambodia and Lao are being trained in PSU, Thailand; joint field studies conducted and specimens loaned between institutions; 4 publications have been produced all of which are multi-authored and multi-national</p>
<p>Activity 2.2. Website for SE Asian Taxonomic Network hosted by HI with contact details; project information and future research &amp; training opportunities</p>		<p>The Taxonomic Network is available at <a href="http://www.harrison-institute.org/afro_asian/index.html">www.harrison-institute.org/afro_asian/index.html</a> - most members are currently from SE/southern Asia and the West, its current membership is 80 from 24 countries.</p>
<p>Output 3. A preliminary outreach programme which includes: Designing Museum exhibits that explain the role of taxonomy. Training staff from National Parks and conservation NGOs in workshops and field studies.</p>	<p>The role of taxonomy is explained to other members of the scientific/conservation community and to the public</p>	<p>Emphasis has been placed during the year on including the conservation community in training workshops that we have organised and spoken about our project to national and international audiences that include conservationists. We have also written articles for publications that are targeted at political, conservation and scientific decision makers.</p>
<p>Activity 3.1. Exhibits about taxonomy and taxonomists made for permanent and temporary display at the Natural History Museum of PSU.</p>		<p>This is scheduled for the last year of the project.</p>
<p>Activity 3.2. Increased capacity in the conservation community</p>		<p>Conservationists have participated in our training workshops. Presentations have been made to the SE Asian conservation community.</p>

## Annex 2 Project's full current logframe

<p><b>Goal:</b> (Some minor amendments to the Logical Framework have been made in response to DI recommendations at Stage 1)</p> <p>Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.</p>			
<p><b>Sub-Goal:</b></p> <p>To enhance taxonomic capacity in SE Asia - so that there is sufficient local expertise to</p> <ul style="list-style-type: none"> <li>• identify and document the region's biodiversity</li> <li>• advise on conservation priorities</li> <li>• monitor the effects of environmental change</li> <li>• assist with the enforcement of CITES</li> <li>• support environmental impact assessments.</li> </ul>	<p>Government Departments and con-servation NGOs use locally trained SE Asian taxonomists to help:</p> <ul style="list-style-type: none"> <li>• inform and educate about the diversity of life in SE Asia</li> <li>• update biodiversity databases such as the IUCN Red List and SE Asian Mammal Databank</li> <li>• select priority species/sites for conservation funding</li> <li>• monitor biodiversity loss for initiatives such as IUCN Countdown 2010</li> <li>• provide data for the Convention on Migratory Species and other initiatives</li> <li>• assist with legislation underpinning CITES</li> </ul>	<p>SE Asian taxonomists are on the advisory boards of and/or list of contributors to:</p> <ul style="list-style-type: none"> <li>• outreach programmes concerned with wildlife conservation in SE Asia</li> <li>• IUCN Red List and SAMD</li> <li>• CEPF Indo-China, assisting with setting priorities and project selection</li> <li>• Ministry of Forestry and National Parks, and associated NGOs monitoring biodiversity</li> <li>• Customs and Excise with respect to the enforcement of CITES</li> </ul>	



<p><b>Purpose</b></p> <p>To enhance taxonomic capacity in SE Asia by developing a university-based, taxonomic training centre of international standard in Thailand and a regional taxonomic network with collaborating institutions in Cambodia and Lao PDR</p>	<p>PSU, RUPP and NUoL have:</p> <ul style="list-style-type: none"> <li>• Qualified staff (PhD is a minimum requirement of university regulations) to: <ul style="list-style-type: none"> <li>(1) supervise future MSc/PhD students in taxonomy</li> <li>(2) teach a taxonomic training course to under-/postgraduates</li> <li>(3) conduct taxonomic research</li> </ul> </li> <li>• Functional and utilised research collections and libraries for taxonomic studies</li> </ul>	<p>Students complete their PhD studies and are awarded postgraduate degrees.</p> <p>Research collections are of international importance and referred to in external publications.</p> <p>Network members publish in international journals.</p>	<p>Students and staff remain committed to conducting taxonomic/biodiversity research.</p> <p>PSU and RUPP continue to fund their respective Natural History Museums.</p>
<p><b>Outputs</b></p> <p>1. A centre for taxonomic training and research based in the Natural History Museum and Department of Biology, Prince of Songkla University (PSU).</p>	<p>Training for under- and post-graduates, especially four trainees (staff members of PSU, RUPP, &amp; NUoL) to conduct taxonomic PhDs (to be completed in 2013)</p> <p>Four taxonomic publications.</p> <p>PSU to host training workshops on field, laboratory, and museum techniques (&amp; ethical</p>	<p>Students enrol for further taxonomic training. PhD graduates become</p> <ul style="list-style-type: none"> <li>• national focal points within the Taxonomic Network.</li> </ul> <p>They continue to develop their respective taxonomic careers as:</p> <ul style="list-style-type: none"> <li>• curators in the Natural History Museums of PSU, Thailand and RUPP, Cambodia</li> <li>• lecturers and postgraduate supervisors at PSU and NUoL.</li> </ul>	<p>Current levels of enthusiasm and support for learning taxonomy and carrying out taxonomic research are maintained within the university system of SE Asia.</p>

	<p>collecting policy) open to all students.</p> <p>PSU to host an international conference on SE Asian taxonomy and zoogeography open to all.</p> <p>Enhanced taxonomic libraries and research collections.</p>	<p>Network pdf library and zoological collections used by an expanding group of young taxonomists.</p> <p>Collaborative taxonomic papers published by Network members in international journals..</p>	
<p>2. A SE Asian Taxonomic Network including PSU in Thailand, RUPP in Cambodia and NUoL in Lao PDR (to be subsequently expanded throughout the region).</p>	<p>MoUs and protocols supporting:</p> <ul style="list-style-type: none"> <li>• student exchanges for training and research</li> <li>• trans-boundary field studies and specimen loans</li> <li>• joint hosting of workshops and conferences</li> <li>• joint publications in international journals.</li> </ul> <p>Website for SE Asian Taxonomic Network hosted by HI with</p> <ul style="list-style-type: none"> <li>• contact details</li> <li>• project information and future research &amp; training opportunities</li> </ul>	<p>There is an exchange of students between members of the network.</p> <p>There are trans-boundary field studies, workshops and research, the outputs of which are published in international journals.</p> <p>The website is accessed by a wide variety of end-users – taxonomists, ecologists, conservationists.</p>	<p>Deans of Science and Heads of Biology Departments maintain their commitment to:</p> <ul style="list-style-type: none"> <li>• supporting taxonomy/biodiversity research</li> <li>• positioning their institutions as centres of excellence in biodiversity studies</li> <li>• collaborating in trans-national studies and training programmes.</li> </ul>

<p>3. A preliminary outreach programme which includes:</p> <ul style="list-style-type: none"> <li>• Designing Museum exhibits that explain the role of taxonomy.</li> <li>• Training staff from National Parks and conservation NGOs in workshops and field studies.</li> </ul>	<p>Exhibits about taxonomy and taxonomists made for permanent and temporary display at the Natural History Museum of PSU.</p> <p>Increased capacity in the conservation community.</p>	<p>Exhibits will be counted, photographed and archived.</p> <p>Increased interaction between the academic and conservation communities.</p>	<p>PSU continues to fund the Natural History Museum.</p> <p>National Park and NGO staff maintain their interest in developing new skills in biodiversity identification and monitoring.</p>
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