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Taxonomic initiative for Southeast Asian bat studies (Vietnam, Thailand, Cambodia and Lao PDR)

Darwin Initiative Annual Report: April, 2006 – March, 2007

Darwin Initiative Annual Report

Important note:

To be completed with reference to the Reporting Guidance Notes for Project Leaders – it is expected that this report will be about 10 pages in length – Submission deadline 30 April 2007

Darwin Project Information

Project Ref Number	14-011
Project Title	Taxonomic initiative for Southeast Asian bat studies
Country(ies)	Thailand, Vietnam, Cambodia, Lao PDR
UK Contract Holder Institution	Harrison Institute
UK Partner Institution(s)	none
Host country Partner Institution(s)	Prince of Songkla University, Thailand; IEBR Vietnam; National University of Laos; Royal University of Phnom Penh, Cambodia
Darwin Grant Value	£47,580 for 2005-6; £47,500 for 2006-7; £44,720 for 2007-8
Start/End dates of Project	1 April, 2005 to 31 March, 2008
Reporting period (1 Apr 200x to 31 Mar 200y) and annual report number (1,2,3..)	1 April, 2006-31 March, 2007; Annual Report No. 2
Project Leader Name	Dr Paul Bates
Project website	14-011
Author(s), date	Paul Bates, 18 April, 2007

1. Project Background

The project is based at the Harrison Institute (**HI**) in the UK and is run in collaboration with:

- The Prince of Songkla University (**PSU**), Hat Yai, Thailand
- The Institute of Ecology and Biological Resources (**IEBR**), Hanoi, Vietnam
- The National University of Laos (**NUL**), Vientiane, Lao PDR
- Royal University of Phnom Penh (**RUPP**), Cambodia

[Acronyms for the four foreign institutions, as above, are used in the remainder of the text below]

The laboratory-based training primarily takes place in the Harrison Institute in UK, PSU in Thailand, IEBR in Vietnam, RUPP in Cambodia and Tuebingen University in Germany. The field component takes place in Thailand, Vietnam, Cambodia and Lao PDR.

The project builds on (and maintains strong links with) a previous Darwin Initiative bat project (162/11/09; 2002-2005), which was co-ordinated by the Harrison Institute in collaboration with Yangon (Rangoon) University, Myanmar (Burma). It currently collaborates with Darwin Initiative project (Ref 14037) in Cambodia.

It addresses the 'taxonomic impediment', which is recognised by the CBD and specifically listed in some host country action plans (eg, Vietnam's BAP includes taxonomy as one of its six priority areas). It meets the needs of in-country zoologists, who have in the past requested taxonomic training from the Harrison Institute. These scientists recognised that:

- Despite a rich biodiversity in SE Asia, there is little local knowledge of taxonomy
- The number of foreign taxonomists available for collaborative research was declining
- There was a need to repatriate taxonomic information from Western institutions as:
- many important voucher specimens (including types) are held in foreign collections
- relevant publications are confined to specialist journals not available in SE Asia
- They lacked expertise in the identification of specimens and managing and curating reference collections
- They lacked expertise in preparing publications for international journals.
- They felt that they were working in isolation with little support nationally, regionally (SE Asia) or internationally.

Therefore, the project seeks to increase capacity in taxonomy and collections management in four mainland SE Asian countries and to build a series of interrelated national, regional and international taxonomy networks, with specific reference to bats.

2. Project Partnerships

PSU, Thailand: The Harrison Institute's partnership with PSU remains very strong. During last year, it included:

- Continued co-training of 5 Darwin MSc students (2 Thai [Mr Pipat Soisook, Ms Ariya Dejtaradol] and 3 Lao [Mr Bounsavanh Douangboubpha, Mr Phouthone Kingsada, Ms Phansamai Phommexay]) who are based at PSU (tuition fees of Lao students paid by PSU)
- Co-training with University College Dublin one Thai PhD student (Mr Kwan Nualcharoen)
- Liaising and supporting Dr Sara Bumrungsri, head of the bat research unit of PSU
- Publishing two scientific papers (one in collaboration with IEBR, Vietnam) in a peer-reviewed journal, submitting one other and preparing a further four
- Designing a prototype for the SE Asian bat identification website
- Co-organising a taxonomic training workshop based at PSU (June/July 2006)
- Co-organising a series of field studies within Thailand; one involving UK staff (October-Nov, 2006) and about 20 without (throughout 2006-7)
- Co-organising the 1st International South-East Asian Bat Conference, to be held in Phuket in May, 2007

The Darwin project has supported PSU in building its capacity and meeting some of the requirements of the CBD especially in relation to the Global Taxonomy Initiative (GTI) and Articles 7 (Identification and monitoring), 12 (Research and training), 17 (Exchange of information) and 18 (Technical and scientific co-operation).

PSU has offered excellent support to the Darwin project. This has involved training, financial support of the academic tuition of the 3 Lao students, organising field work, much administrative work, workshops and a prestigious conference planned for May, 2007, which has attracted 130+ delegates from North America, Europe, southern Asia, SE Asia, Japan, Taiwan and Australia.

IEBR, Vietnam: The Harrison Institute's partnership with IEBR remains strong. Over the year it included:

- Continued training of one Darwin PhD student (Mr Vu Dinh Thong), who through the offices of the Harrison Institute is now registered for his PhD at Tuebingen University, Germany – part of his study will take place in Tuebingen (bat echolocation), part at the Harrison Institute (taxonomy)

and part in Vietnam (field research). Academic training for the PhD is funded by the German Government; living costs are funded by the Vietnamese Government and the Darwin Initiative covers some travel and field costs.

- Continued training, in conjunction with Mr Neil Furey (Program Manager of Ba Be Ecological Research Station and Aberdeen University PhD student) of two Darwin MSc students – Mr Vuong Tan Tu and Mr Dao Nhan Loi primarily in Ba Be Nature Reserve and Kim Hy Nature Reserve, northern Vietnam. Training includes extensive hands-on experience of field surveys as well as the preparation of papers and presentations.
- A field study on Cat Ba Island, northern Vietnam (August, 2006), which was co-organised by IEBR and the Harrison Institute and jointly funded by BP Conservation and the Darwin Initiative. This included the Darwin students from Vietnam, Thailand and Lao PDR and additional students from Malaysia and Taiwan.



Mr Vuong Tan Tu, IEBR, Vietnam (left) with Ms Ariya Dejtaradol, PSU, Thailand (centre), Mr Phouthone Kingsada, NUL, Lao PDR and Ms Chu, Taiwan (right) during a bat survey of Cat Ba National Park.

- The Darwin MSc students took part in an event entitled 'Vietnamese Bat Conservation and Communication Skills' (November, 2006), which was co-financed by the Rufford Foundation, UK. The training event included members of the technical, legal and forest protection departments of Kim Hy Nature Reserve.

HNU (Hanoi National University), Vietnam: This is a new partnership, which has developed in the past year.

- It is based on the training by Neil Furey (Aberdeen University) of one BSc student (Mr Nguyen Xuan Hung) from HNU in aspects of bat studies.

In Vietnam, the Darwin project has supported IEBR (and to a lesser extent HNU) build its capacity and meet some of the requirements of the CBD. As with PSU above, it is most relevant to the Global Taxonomy Initiative and Articles 7, 12, 17 and 18.

IEBR and the Vietnamese Government have offered good support to the Darwin project. The



Above: Neil Furey analysing bat echolocation with the Darwin trainees. Right: Ms Phansamai Phommexay of NUL, Lao PDR taking recordings of bat echolocation.

Government sponsored Mr Vu Dinh Thong (an IEBR permanent staff member) to undertake a four year PhD study in Germany, UK and Vietnam. IEBR have also permitted two other staff members to undertake training in bat studies and have provided (with other authorities) permissions and support for an international bat study to Cat Ba Island and national studies in Ba Be and Kim Hy Nature Reserve.

NUL, Lao PDR: The Harrison Institute's partnership with NUL remains indirect since the three students from the university (two from the Zoology Department and one from Forestry) are currently undertaking their studies at PSU in Thailand.

In Lao PDR, the Darwin project has supported NUL by training three of its staff (all MSc students). This will build its capacity and allow it, in the future, to meet some of the requirements of the CBD (Global Taxonomy Initiative (GTI) and Articles 7, 12, 17, and 18).

NUL have supported the Darwin project by permitting three of its staff members to undertake MSc studies in Thailand. Currently, there is little direct interaction with NUL at a more senior level. We intend to build stronger links with NUL and other academic and conservation bodies in Lao PDR in 2007-8.

RUPP, Cambodia: The Harrison Institute's partnership with RUPP has developed strongly over the year.

It has identified two MSc students (Mr Vuthy Vu, Ms Vichheka) and one potential curator of collections (Mr Savenge – possible MSc candidate) for further training. All were previously

trained in a taught course MSc (Conservation and applied research) by Darwin project (Ref 14037) and are now about to undertake their MSc investigations. They are currently (April, 2007) at PSU receiving training in bat field studies, sponsored by Darwin project (Ref 14037).

Five Cambodian MSc students were given field experience of bat work in a joint Thai/Cambodian/UK field survey to Botum Sakor National Park in February, 2007, jointly sponsored by this Darwin project and Darwin project (Ref 14037).

The two Darwin project will together help build capacity in RUPP and allow it to meet some of the requirements of the CBD (the Global Taxonomy Initiative (GTI) and Articles 7, 12, 17, and 18).

RUPP have supported the Darwin project by permitting its postgraduate students to take part in our training programmes. Currently, there is little interaction directly with RUPP at a more senior level, as this is undertaken on our behalf by Darwin project Ref14037. We intend to build stronger links with RUPP in 2007-8.

Other Collaborations

World/Thailand: By jointly co-organising with PSU and Texas Tech University (USA) the First International South-East Asian Bat Conference (to be held in Thailand in May, 2007), the project has made links with 130+ delegates with an interest in Asian bats. This conference will provide an invaluable chance for the Darwin trainees to build a network of contacts (both fellow students and senior professionals) from throughout the region and beyond. Delegates are coming from North America, Europe, Asia (India through to Japan and south to the Philippines) and Australia.

In Cambodia, the project has collaborated with the Darwin project (Ref14037) 'Building University Capacity to Train Future Cambodian Conservationists' (see above). It has also



Dr Sara Bumrungsri, PSU, Thailand training students from RUPP, Cambodia in Botum Sakor National Park, Cambodia

collaborated with Frontier, Cambodia (field training in Botum Sakor) and Conservation International and the Wildlife Conservation Society, Cambodia in the selection of future sites for field surveys.

In Vietnam, it has worked extensively with Neil Furey of Aberdeen University, who in turn has links to Fauna and Flora International, Aberdeen University and Ba Be Ecological Research Station. It is also collaborating with Tuebingen University, Germany on the training of one Vietnamese PhD Darwin student (Mr Vu Dinh Thong). Vietnamese Darwin

students are also involved in projects sponsored by BP Conservation and the Rufford Foundation, UK.

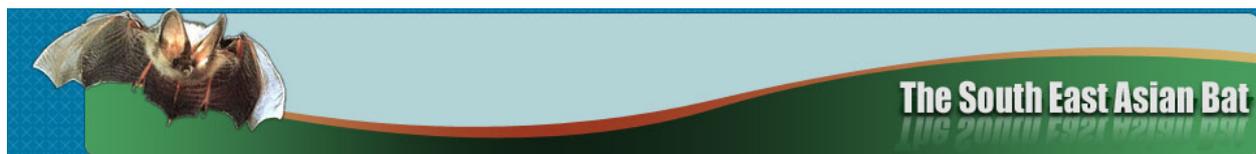
Currently the project does not have a link with a CBD focal point.

3. Project progress

3.1 Progress in carrying out project activities

Output 1 – a Darwin website dedicated to the identification and taxonomy of SE Asian bats:

During the year, data on the taxonomy, distribution, ecology, echolocation and status of all 155 bat species known from the region was collated and included in 155 separate bat species files in an Access database. A prototype website was designed in PSU and the draft data loaded. This activity has been carried out in the manner and time planned.



A first draft of the bat website can be viewed at www.sc.psu.ac.th/batDB. This version is a working prototype and is not available to the public. All 155 species accounts need to be revised, photographs added, and the layout and links made more attractive and user friendly.

Output 2 – Four institutions in four SE Asian countries with international experience of taxonomic research and with an associated collection of voucher specimens.

During the year, staff and students from all four collaborating institutions undertook field and laboratory research in international context. Activities related to this included (1) the participation of Dr Sara Bumrungsri (PSU) and Mr Vu Dinh Thong (IEBR) (together with Paul Bates) in the SAMD (South-East Asian Mammal Database) project in Bogor Java (May, 2006) (2) Darwin trainees from PSU and NUL took part in a taxonomy training workshop in PSU (July, 2006) (3) an international field study took place in Cat Ba Island, Vietnam with Darwin trainees from Thailand, Lao PDR, and Vietnam and additional students from Malaysia and Taiwan (August, 2006) (4) an international field study took place in northern Thailand, which included the Darwin Thai and Lao students (October, 2006) (5) additional field studies, organised by PSU and IEBR took place on an irregular basis throughout the year (6) Mr Vu Dinh Thong (Vietnam) commenced his bat echolocation and taxonomy PhD in Tuebingen University/ Harrison Institute (October, 2006) (7) lectures on bat taxonomy, echolocation and ecology were given by a UK and Thai Darwin staff and trainee to 12 Cambodian postgraduate students in Phnom Penh;



Pipat Soisook photographing live bats for inclusion on the SE Asian bat website.

subsequently five students took part in an international field survey to Botum Sakor (February, 2007); three of the students are currently on a training course at PSU (8) two Thai MSc students (Pipat Soisook and Ariya Dejtaradol) have come to the Harrison Institute for 6 weeks of training and supervision in preparing their MSc and international publications; the two Lao students will come in May, 2007 (9) voucher specimens were added to the collections of PSU, IEBR and RUPP (those for RUPP are currently held by Frontier Cambodia). Many of the voucher specimens are already being researched for inclusion in the MSc theses of the students and in the associated papers for publication in international journals.

All activities have been carried out in the manner planned, with the exception of the October field study to Myanmar, which owing to a problem with permissions (due to a change of Education Minister and other current difficulties with the Myanmar Government) was relocated to northern Thailand.

All activities were carried out at the scheduled time with the exception of (1) the induction of the Cambodian students into the project - In the Implementation Table (revised version), this was to take place in Oct-Nov, 2006. However, for practical reasons (the students had not completed their taught MSc course), this was delayed until February, 2007 - and (2) the study visits to the UK of the Thai and Lao students - it was thought that supervision would be more focused if the students came in two groups of two, rather than all four together as previously envisaged.

Output 3 – A series of international publications and presentations on aspects of SE Asian bat taxonomy.

During the year, one paper on Thai/Vietnamese bats (published in 2005-2006) was disseminated, one paper on Thai bats was published and two papers on aspects of Thai/Cambodian and Lao bats were submitted for publication. In addition, four scientific papers on aspects of Thai/Myanmar/Cambodian/Lao/Vietnamese bat taxonomy are in preparation for international journals and two papers on Vietnamese bats are in preparation for a Vietnamese journal.

Eight presentations (one oral and seven poster) are prepared, or in preparation, for the International SE Asian Bat Conference (May, 2008). Three TV programmes on the BP Conservation/Darwin project bat research in Vietnam were made during the field survey of Cat Ba Island in August, 2006. Filmed by ITV Thailand these programmes will be aired in both Vietnam and Thailand. An article about the Darwin/BP Conservation bat research appeared on the Vietnamese news website <http://vietnamnet.vn/khoahoc/trongnuoc/2006/10/628210/> (in Vietnamese) and <http://english.vietnamnet.vn/tech/2006/10/628562/> (in English). The Harrison Institute website www.harrison-institute.org/Darwin2/TISABS.htm included updated information on the progress of the project.



ITV Thailand filming Darwin students during a field expedition to Vietnam.

3.2 Progress towards Project Outputs

Good progress has been made towards achieving all three principal outputs. Although, the website (Output 1) is currently ahead of schedule, it still requires a great deal of time to revise and amend the 155 draft texts which have been entered into the Access database. We are currently locating and collating all remaining photographs. If the website is to be completed by April, 2008, it is essential to

submit everything to the web designer by the end of December, 2007. This will be a considerable challenge. The measurable indicator will be the

completion or otherwise of the website. It can be assumed that the website will be used extensively by interested researchers (the assumption still holds true).

It is most pleasing to report that in the first two years of this project all four institutions in the four Asian countries have had international experience of taxonomic studies (Output 2). We currently have students studying MSc and PhDs on bats from all four countries. All have participated in regional workshops and will participate in an international conference. To date, voucher specimen collections have been enhanced in all countries except Lao PDR. The assumption that the Darwin trainees remain committed has held true and the indicators (MSc research, specimen collections, participation in conferences) are all positive. We are confident that Output 2 can be achieved in full by the end of the project.

To date, during the first two years of the project, two papers have been published in peer-reviewed international journals. Two more are submitted and four more are in preparation. Additionally, two other papers are being prepared for local journals. One TV documentary has been made of the project's bat work in Thailand. A further three TV documentaries have been made of the bat work in Vietnam and an article about this research was posted on the most prestigious Vietnamese news website (in Vietnamese and English). An international conference on SE Asian bats is being organised by PSU and the Harrison Institute to be held in Thailand in May, 2007 with 130+ delegates from 4 continents. The Darwin trainees are presenting posters at the Conference and are an integral part of the organisation and will help with post conference tours. The assumption that data worthy of publication have been discovered has held true and all the measurable indicators have already been met. We are confident that Output 3 will be achieved in full by the end of the project.

3.3 Standard Output Measures

Table 1 Project Standard Output Measures

Code No.	Description	Year 1 Total	Year 2 Total	TOTAL
Established codes				
1A	Students studying for PhDs	2 1 Thai, 1 Viet	2 1 Thai, 1 Viet	2
2	MSc students selected to date from Thailand, Vietnam, Cambodia and Lao PDR	6	9 2 Thai, 2 Viet, 2 Camb, 3 Lao	9
4C	Additional students received laboratory and/or field based training	7	2	9
4D	Duration of training – unclear of the meaning of this category - in addition all Thai, Lao and Viet students have received training throughout the year at PSU, Tuebingen and Ba Be NP respectively; and Cambodian students from Darwin Project Ref 14037	1.5	1	2.5
7	A manual - on specimen preparation	1	0	1
8	UK project staff spent time in Thailand, Vietnam and Cambodia	9.5 And Darwin students (and staff) spent 20 weeks in the UK, 2 weeks in Japan and 10.5 weeks in each other's countries	7 And Darwin students spent 5 weeks in the UK and 92 weeks (combined) in each other's countries	16.5
11A	Paper published by Acta Chiropterologica (see below for details)	1	1	2
11B	Paper submitted to Acta Chiropterologica (see below for details)	1	1	2
12A	Database on the Bats of mainland SE Asia (in preparation)	1	1	1
13B	Species reference collections enhanced in Vietnam, Thailand & Cambodia	2 Thai and Vietnam	3 Thai, Viet & Cam	3
14A	Study visits/workshops in	3	4	7

	Thailand, Lao PDR Vietnam & Cambodia			
14B	Presentations about the Darwin project were made at the 9 th International Mammalogical Congress in Japan (31 July- 5 August) and 5 th Biennial Conference of the Systematics Association (22-26 August)	2	0	2
15B	Newspaper and Website releases	1 Thai	1 Vietnam	2
16A	Newsletter published on the Harrison Institute website	1	1 updated	1
17A	Regional network of mainland SE Asian bat researchers established	1	1 further extended	1
18A	TV documentaries	1 on Thai bats	3 on Viet bats, for transmission in Thai and Vietnam	4
18C	TV documentary	1 on Thai bats		1
19C	A radio interview	1 on Thai bats	0	1
20	To date, two bat detectors, taxonomic equipment	£2000	£0	£2000
23	During the 1 st year, the Darwin team raised additional funds from The Royal Society; BP Conservation; The Vietnamese Government; PSU and Thai educational sources. During the 2 nd year, additional funds were raised for the International Bat Conference (£7100) and indirectly from Tuebingen University for the PhD supervision costs of Vu Dinh Thong (approx £12000). Vietnamese Darwin students also benefited from a Rufford Foundation	£55800	£20200	£76000

	award (£1000).		
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Table 2 Publications

Type * (eg journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (eg contact address, website)	Cost £ (if applicable)
Scientific paper	Bumrungsri, S., D.L. Harrison, Chutamas Satasook, Amorn Prajukjitr, Siriporn Thong-Aree and P.J.J. Bates. (2006). A review of bat research in Thailand with eight new species records for the country	Acta Chiropterologica, 8(2): 325-359	All major scientific libraries PDF available from the Harrison Institute and IEBR, Vietnam	none
3 TV documentaries (on CD-Rom)	ITV Thailand 2006 The Bats of Cat Ba, Vietnam	ITV, Thailand	Harrison Institute	None – for private viewing only

3.4 Progress towards the project purpose and outcomes

There has been good progress towards meeting the project purpose. The assumptions hold true as we have seen a growing interest (both within the project area and extralimitally in other SE Asian countries such as Java) amongst the scientific community in taxonomy and bat research. There is an increasing recognition that good conservation requires accurate information about biodiversity. We have seen excellent co-operation between students from all the different participating countries. The indicators are most adequate in measuring outcomes. Collaborative studies of an international standard are already being conducted and this will increase capacity in bat taxonomy amongst researchers and research institutions in SE Asia.

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

The impact of the project on the conservation of biodiversity in SE Asia will be incremental. Currently, there is a growing interest and awareness of bats amongst the scientific community. We have discovered new taxa and their geographical ranges (and those of many other taxa) defined. Species that were considered rare are now known to be more widespread. In other cases, taxa that were thought to comprise one species have been shown to be complexes containing two or more discrete species. These findings all have implications for conservation but have not directly affected (as yet) practical conservation efforts in the field. A workshop of the South-East Asian Databank (SAMDB) in May, 2006, in Bogor, Java, has helped the project to bridge the divide between the scientific and conservation community. Taxonomic, ecological and conservation data on bats from throughout the project region were presented for inclusion in the databank (<http://www.ieaitaly.org/samdb>) by the Darwin team, who comprised Paul Bates from UK, Dr Sara Bumrungsri from Thailand and Mr Vu Dinh Thong from Vietnam.

The SE Asian bat website (in progress) will act as a tool which will allow researchers and conservationists to focus on those species that have a limited or endemic distribution within the region and help concentrate conservation attention on the most critically endangered species.

4. Monitoring, evaluation and lessons

The twin purposes of the project are to increase capacity in bat taxonomy in SE Asia and to develop collaborative links. The following outputs demonstrate that these purposes are being successfully achieved:

- The project is successfully training students and local scientific staff in taxonomic research methods. These individuals are actively carrying out taxonomic research for inclusion in their MSc/PhD studies and scientific publications
- A number of papers on aspects of bat taxonomy authored by local students and staff are in preparation, submitted and in two cases already published in international



- journals
- The papers include a range of authors from SE Asia, Europe, North America and Australia, who are actively collaborating on the same project
- Collaborative field work has been carried out by the students from the 4 host countries in Vietnam, Thailand and Cambodia
- An international conference on SE Asian bats (including bat taxonomy), which is scheduled for May, 2007 has attracted 130+ delegates.

The Harrison Institute has been most impressed by the commitment and calibre of the students who are working within the Darwin project. This is extremely encouraging for the development of further research and training projects in the region.

Website of the First International South-East Asian Bat Conference. www.sc.psu.ac.th/bats

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

During the second year, we have made particular efforts to raise the profile of the project in Vietnam (one of the concerns of the reviewer). We co-organised a field workshop in Cat Ba National Park, (August, 2006) and are co-organising a post SE Asia bat conference tour (May, 2007) to Ba Be National Park – both these activities have involved liaising and explaining the work of the project to local government and forestry officials. Vietnamese students took part in a workshop entitled ‘Vietnamese Bat Conservation and Communication Skills’ in Nov-Dec, 2006 at Kim Hy Nature Reserve. It was focused on 12 staff from the Reserve belonging to the technical, legal and forest protection teams. A Thai ITV film crew worked with us in Cat Ba and have put together three short documentaries about our work on bats in Vietnam. The Cat Ba field studies were also included in news report (in Vietnamese and English) on a Vietnamese news website. In addition, the Vietnamese Government are sponsoring the living costs of our PhD Darwin student to study at Tuebingen University (the University are supporting his tuition costs).



Dissemination of information on bats by Darwin Trainees to members of the technical, legal and forest protection teams of Kim Hy Nature Reserve, Vietnam – a joint project sponsored by the Rufford Foundation and Darwin Initiative



During the year, we successfully raised the profile of the project in Cambodia with the scientific community and have three RUPP students currently working with us. They have already received training in PSU, Thailand and in the field in Cambodia. We are collaborating with colleagues from the Cambodian Darwin project (Ref 14037) and have involved and/or consulted the British Embassy; Frontier Cambodia; Conservation International, Cambodia and the Wildlife Conservation Society, Cambodia in aspects of our work in the country. We intend (if possible) to try and raise the profile with the Government authorities in our third and final year.

Our profile in Lao PDR remains limited. We are currently training three staff from NUL and have discussed the project with the Wildlife Conservation Society, Lao PDR. However, we have not made meaningful contact with the relevant government authorities in Vientiane. As with Cambodia, we will try and raise the profile in the final year. The senior academic in NUL whom we were liaising has recently been killed in a motor accident.

Our bat data for all four countries has been included in an international (SAMD) database.

6. Other comments on progress not covered elsewhere

The project was refined during the year (all changes were notified to the Secretariat). The UK training aspect was focused on whole organism taxonomy, with the training in echolocation undertaken SE Asia. Minor amendments were made to the timetable. A UK data technician was employed to input data into the bat website. Additional outputs included the training of more students than originally envisioned, the preparation and publication of additional scientific papers and the hosting of the First South-East Asian International Bat Conference, planned for May, 2006.

There were no significant difficulties and, as far as we are aware, the project does not face any particular risks.

7. Sustainability

The profiles of the project in Thailand, Vietnam, Cambodia and Lao PDR have been discussed in Section 5. Interest has grown significantly, especially in Thailand, Vietnam and Cambodia, with increased numbers of students, additional grants being applied for and successfully received. There has also been considerable media interest in Thailand and Vietnam.

The exit strategy is satisfactory in Thailand, Vietnam and Lao PDR. In each case, the Darwin trainees are either existing members of university/ institute staff or have indicated a desire to undertake further research as PhD candidates. In Cambodia, the employment prospects of the three trainees is currently uncertain. We will work closely with the Cambodian Darwin project Ref 14037 to ensure the best possible outcome.

All the academic/conservation linkages and networks can be sustained after the completion of the project and have already been upgraded by involving extralimital countries both in SE Asia and elsewhere in the forthcoming international conference.

We are confident that the majority of the outputs, outcomes and impacts will not only be sustained but also enhanced in the years following the completion of this particular project.

8. Dissemination

Details of dissemination activities have been included in Sections 3.1, 3.2, 3.3 and 3.5. They include scientific papers, academic and conservation workshops, TV documentaries, and web based news reports. Target audiences include the scientific community in SE Asia and internationally, the general public, forestry protection department, conservation NGOs in SE Asia, and conservation community worldwide. Dissemination activities will be further enhanced once the bat website is completed and hosted by PSU. PSU have agreed to cover the costs involved.

9. Project Expenditure

Table 3 Project expenditure during the reporting period (Defra Financial Year 01 April to 31 March)

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 ECTF 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 of mainland SE Asia. Students from the four different countries (Vietnam, Thailand, Cambodia and Lao PDR) have worked/and are working together in harmony and giving mutual support. In PSU, Thailand, 5 MSc students (from Lao and Thailand) are working together in one team and in addition to their own studies have begun training Cambodian students in a range of practical research techniques.

In August, 2006, students from Vietnam, Lao, Thailand, Malaysia and Taiwan worked together with exemplary spirit on a field survey in northern Vietnam.

For the forthcoming (May, 2007) 1st International South-East Asian Bat Conference, in Phuket, which PSU, the Harrison Institute and Texas Tech are co-hosting, we have attracted 130+ delegates from throughout Asia, Europe, the Americas and Australia. For this conference, we have raised sponsorship of £7100 to cover, amongst other things, the cost of accommodation, food and registration for 41 students (from SE Asia, Europe and USA).

In the first two years of the project, we and our team members have raised either in additional external grants, or payment in kind, the equivalent of £76,000. This bodes exceptionally well for the future.

Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2006/07

Project summary	Measurable Indicators	Progress and Achievements April 2006 - March 2007	Actions required/planned for next period
<p>Goal: <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> <i>The conservation of biological diversity,</i> <i>The sustainable use of its components, and</i> <i>The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources</i></p>		<p>Throughout the year we have drawn on UK expertise and worked extensively with local partners in SE Asia. We have built in-country capacity and disseminated data in order to actively promote the conservation of bats within the study region</p>	<p><i>(do not fill not applicable)</i></p>
<p>Purpose: To increase capacity in bat taxonomy amongst in-country scientists in research institutions in mainland SE Asia and to develop collaborative research links between taxonomists in different SE Asian countries</p>	<p>Bat taxonomic studies of an international standard are conducted by in-country scientists within institutions of SE Asia Collaborative regional studies are conducted by bat taxonomists</p>	<p>Two papers by Darwin trainees published in international journals; further papers submitted and in prep. Collaboration in writing papers, conducting fieldwork and exchanging data; regional workshops undertaken International bat conference, co-organised by PSU, Harrison Inst and Texas Tech scheduled for Thailand (May, 2007)</p>	<p>Expand and consolidate on the results achieved in the first year</p>
<p>Output 1. A Darwin bat website hosted by PSU</p>	<p>Website dedicated to the identification and taxonomy of SE Asian bats</p>	<p>Progress is ahead of the original schedule but still much work is needed before the website is completed. Indicator is the most appropriate.</p>	
<p>Activity 1.1 Data on all 155 species to be compiled and inputted onto an Access database.</p>		<p>Data on all 155 species are now on the Access database. Each requires careful revision before submission to the webmaster to be turned into an interactive bat website</p>	
<p>Output 2. Four institutions in four SE Asian countries with international experience of taxonomic research and with an associated collection of bat voucher specimens</p>	<p>A minimum of eight Darwin students and associated technicians from SE Asian institutions trained in taxonomic techniques and collections management to an international standard</p>	<p>Progress in on schedule. The indicator remains most appropriate</p>	
<p>Activity 2.1. Nine MSc and 2 PhD students from 4 countries are being</p>		<p>Progress is indicated by the fact that 8 of the 11 students have been</p>	

trained in aspects of bat taxonomy and collections management	working on their own research for at least 9 months and 2 from Cambodia are currently selecting their subjects for a 12 month study
Activity 2.2. voucher specimen collections upgraded	Collections have been upgraded significantly in Thailand and Vietnam, they are starting to be upgraded in Cambodia and have not changed significantly in Lao (as yet).
Output 3. A series of international publications and presentations on aspects of SE Asian bat taxonomy	Radio and TV broadcasts, information on websites and papers published in scientific journals
Activity 3.1. Publications submitted to international journals; presentations, and broadcasts made to selected audiences	Progress is on schedule. The indicators remain most appropriate
	Two papers have already been published, two more are submitted and at least 4 are currently being prepared for international journals and others for local journals. Information has been broad cast on TV, radio and websites

Annex 2 Project's full current logframe

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>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</p> <ul style="list-style-type: none"> • 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 			
<p>Purpose To increase capacity in bat taxonomy amongst in-country scientists in research institutions in mainland SE Asia.</p> <p><u>And</u>, to develop collaborative research links between taxonomists in different SE Asian countries.</p>	<p>Bat taxonomic studies of an international standard are conducted by in-country scientists within institutions of SE Asia.</p> <p>Collaborative regional studies are conducted by bat taxonomists.</p>	<p>Resultant publications are respected worldwide and the information generated is incorporated into international databases (eg IUCN Southeast Asian Mammal Database).</p> <p>Publications include authors from two or more institutes in different SE Asian countries.</p>	<p>The Southeast Asian scientific community continues to see the need for taxonomic expertise to increase its understanding of its rich biodiversity and thereby promote its conservation.</p> <p>A willingness to collaborate on a regional basis.</p>
<p>Outputs A Darwin website hosted by the ASEAN Regional Centre for Biodiversity Conservation (ARCBC)</p> <p>Four institutions in four SE Asian countries with international experience of taxonomic research and with an associated collection of bat voucher specimens</p>	<p>Website dedicated to the identification and taxonomy of SE Asian bats</p> <p>A minimum of eight Darwin students and associated technicians from SE Asian institutions trained in taxonomic techniques and collections management to an international standard</p>	<p>Website accessed regularly by the local and international scientific community</p> <p>MSc theses on bat taxonomy. Participation in regional and international workshops and conferences. Inputs into the website and other publications. Well maintained specimen collections.</p>	<p>Data on the website from scientifically objective studies and of an international standard</p> <p>Darwin trainees remain committed to the project</p>

A series of international publications and presentations on aspects of Southeast Asian bat taxonomy	Radio and television broadcasts, information on websites and papers published in scientific journals	Copies of all publications and information on broadcasts sent to the Darwin Initiative	Data worthy of publication are discovered during the project
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Annex 3 onwards – supplementary material (optional)

Electronic version of

Bumrungsri, S., D.L. Harrison, Chutamas Satasook, Amorn Prajukjitr, Siriporn Thong-Aree and P.J.J. Bates. (2006). A review of bat research in Thailand with eight new species records for the country. *Acta Chiropterologica*, 8(2): 325-359

Checklist for submission

	Check
Is the report less than 5MB? If so, please email to Darwin-Projects@ectf-ed.org.uk putting the project number in the Subject line.	
Is your report more than 5MB? If so, please advise Darwin-Projects@ectf-ed.org.uk that the report will be send by post on CD, putting the project number in the Subject line.	
Do you have hard copies of material you want to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number.	
Have you completed the Project Expenditure table?	
Do not include claim forms or communications for Defra with this report.	