



Darwin Initiative for the Survival of Species

Annual Report

1. Darwin Project Information

<i>Project Ref. Number</i>	13/023
<i>Project Title</i>	Tropical Forest Canopy Training Programme for the ASEAN Region
<i>Country(ies)</i>	Malaysia
<i>UK Contractor</i>	Global Canopy Programme
<i>Partner Organisation(s)</i>	Institute of Tropical Biology and Conservation (ITBC). Universiti Malaysia Sabah.
<i>Darwin Grant Value</i>	107,553
<i>Start/End dates</i>	1 Oct 2004 – 30 March 2007
<i>Reporting period (1 Apr 200x to 31 Mar 200y) and report number (1,2,3..)</i>	1 Oct 2004 – 30 March 2005 Report no 1
<i>Project website</i>	http://www.globalcanopy.org/training/sabahcourse.php
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2. Project Background

The significance of forest canopies for biodiversity conservation is still poorly understood. Many threatened species (e.g. orangutans, hornbills) are almost impossible to study from the ground. Ozanne et al 2003 (Science 301:183-186) states that ‘..forest canopies are among the most species-rich yet most highly threatened terrestrial habitats’, ‘..they support about 40 % of extant species of which 10% are predicted to be canopy specialists’ and ‘..the forest canopy is the functional interface between 90% of Earth’s terrestrial biomass and the atmosphere’. Human capacity for canopy investigation is limited in biodiversity rich countries despite the CBD now highlighting the forest canopy as an area needing investigation. To overcome the structural complexity and the height of the canopy, specialized training is required in access methods and experimental design. The project will build local capacity in canopy research and conservation training so that researchers, forest managers and conservationists in Malaysia and the ASEAN region can, in future, be trained locally to meet these challenges.

3. Project Purpose and Outputs

The purpose of the project is to build human capacity in Malaysia and other biodiversity rich nations in the ASEAN region for investigating forest canopy biodiversity, its conservation, function, value and policy context.

The outputs of the project as provided in the logical framework in appendix 1 are:

1. Forest canopy research and conservation field course developed and established at University of Malaysia Sabah.
2. Human capacity for training in canopy research and conservation developed.
3. Canopy training manual for the field course produced.

4. New leaders in canopy science and conservation trained.
5. Agreement on relevant national and regional institutions on a strategy for canopy training in the region

No changes were made to the outputs or the proposed operational plan within the reporting period.

4. Progress

Summary of Progress

Planning for the first canopy field course in Sabah was undertaken by email, fax and telephone throughout October and November 2004.

Climbing equipment was purchased in the UK and successfully shipped to Sabah in November 2004.

Course participants were selected and invited to attend the course in December 2004.

A web site was set up for the project in December 2004.

A draft manual, in English, for the climbing training component of the course was prepared by January 2005 for use on the course. All issues of health and safety and insurance cover were resolved by January 2005 prior to the start of the course. By which time a full risk assessment for the course was also prepared.

A three-week canopy training course was run from 17th of Jan to 4th of Feb 2005. This course successfully provide initial training for 8 Malaysian canopy climbing trainers. The course also trained 10 ASEAN region canopy science trainers (2 from Phillipines, 1 from China, 7 from Malaysia). Climbing training was provided by 2 British climbing professionals and science training was provide by 3 British scientists and 1 Malaysian scientist.

A meeting of ASEAN science trainers and British project staff was held at the end of the course to make plans for the preparation of the course manual and for the project workshop.

A press release was prepared and distributed in Malaysia prior to the course. This resulted in two press articles (see appendices 2 and 3). In addition short articles on the course were prepared for the Universiti Malaysia Sabah Newsletter, the International Canopy Network 'What's Up' newsletter and the British Ecological Society Bulletin (see appendix 4, 5 and 6).

A Canopy Fellows Newsletter has been drafted and inputs have been received from course participants but this has not yet been distributed. This will be distributed in June 2005.

Project Achievements

The main project achievement has been that a three-week canopy training course was successfully completed at Danum Valley field centre, the first such course in the region. Climbing equipment was successfully transported to and stored in Danum Valley. A Basic Canopy Access Proficiency syllabus has been finalised (compliant with UK BS 7985:2002 and LOLER regulations for work at height and lifting operations) and fine-tuned for use in the tallest tropical trees in the world and a superb draft canopy climbing manual has been prepared. The challenge of providing safe roped canopy access for novices in trees as high as 85m should not be underestimated. We are delighted that so many candidates successfully overcame personal fear, mastered techniques and received their BCAP certification in this first year.

The course provided training for trainers for the following:

- 1. Malaysian canopy climbing instructors:** A total of 8 were trained and 4 of these were considered to be suitable (skilled and safe) to become future climbing instructors. These 4 instructors will need to continue with training on the next two courses for them to qualify as climbing instructors at the end of the project. They will need to gain climbing experience during each year. Two more climbing instructors will have to be trained on next year's course, but it is not easy, prior to attending a course, to determine who will and who will not be a good climbing instructor candidate, we will select 4 more climbing trainees for inclusion on next years course.
- 2. Malaysian canopy science trainers:** A total of 7 were trained and five of them completed the full climbing training programme. A good range of scientists were included in the 'team' of local science trainers but no ecophysiologicalist was included. It is particularly important that a local person is identified to provide this expertise on courses after the end of the project and efforts will be made in the next year to identify such a person. All Malaysian science trainers committed themselves, in writing, to provide inputs to future courses and to prepare inputs to the course syllabus and manual.
- 3. ASEAN canopy science trainers:** A total of 3 canopy science trainers from the ASEAN region were trained, one from China and two from the Phillipines. All three were excellent trainees and are keen to provide inputs to future courses. However, it was not our intention for them to provide training inputs to future courses as this would not be sustainable beyond the end of the project. In future, however, we may decide to bring one or two of them as trainers of future courses in order to enhance the experience and learning opportunities for the Malaysian science trainers. Any changes to our original plans, in this respect, will be discussed with the Darwin Initiative for clearance prior to implementation.

In addition, during the period, the GCP attracted additional funding from the Dulverton Trust which enabled the full development and independent audit of the Basic Canopy Access Proficiency (BCAP) syllabus. This was achieved in collaboration with Canopy Access Ltd (CAL), a specialist rope-access company providing canopy access training for the course. The BCAP syllabus is the only such course in the world to conform to BS 7985:2002 (and 2005 revisions) and all relevant UK and EU legislation for work at height, which are some of the most stringent in the world. The Darwin Initiative funded course was the first in the world to use these new methods in the tropics to train specialists in biodiversity rich nations.

Difficulties encountered

- 1. Selection of participants:** The selection of participants was the responsibility of the local collaborators and they did a good job in identifying 16 Malaysians and 4 ASEAN region trainees. Slightly fewer science trainers were selected for training than originally anticipated, but this is not of concern as 8 good canopy science trainers in country will be sufficient to achieve the objectives of the project. Of more concern is the fact that only 4 of the 8 canopy climbing instructors are likely to be good future climbing instructors. In retrospect it is a flaw in the project design for us to have expected that all 8 of the climbing trainee trainers selected would have the ability, aptitude, attention to detail and concern for safety that is required to become a canopy climber and it is very hard to know whether someone is a suitable candidate for such a role before you have put them through an initial canopy climbing course. Given that the local coordinators had no previous experience of canopy climbing or science, we are fortunate that, of the 8 candidates that were selected, 4 of them are suitable for a future role as a canopy climbing instructor. In the future, given the climbing experience now achieved, the course organisers will be better qualified to select canopy instructor trainees. We will aim to identify 4 more candidates for next year's course and will

expect 2 or more of them to become suitably qualified canopy climbing instructors.

2. Information: The climbing trainee trainers on the first week of course had not received full course information and therefore were not properly prepared for the course. Many of them did not speak English and materials were not available in Bahasa Malayu. This meant that the initial day of the course was spent translating documentation (particularly the important safety documentation) and appropriate clothing was purchased for them. Several of the participants were able to translate for the others. In future this will not happen as all course materials will be translated into Bahasa and distributed to participants prior to the course by the local course coordinator.

Project design

No changes have been made to the project design but the course structure is likely to change and this will be discussed with the Darwin Initiative after the project workshop where any changes are likely to affect the project measurable outputs.

Workplan for the next reporting period (April 1st 2005 – Oct 1st 2005)

Apr - May 2005	Finalise and distribute canopy fellows newsletter
Apr - 30 Jun 2005	Preparation of modules for draft manual by local science trainers
Apr - 30 August 2005	Preparation of draft course manual
Apr – 30 Oct 2005	Placement of field course on UMS curriculum
Apr – Aug 2005	Plan Canopy training workshop
Sept 21-23 2005	Hold Canopy training workshop
Sept 2005	Press release prior to canopy training workshop

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

This is our first report so there are no previous reviews.

6. Partnerships

During the first 6 months of the project, a good working relationship has been established between the local and UK partners. In particular, regular telephone and email correspondence between the GCP, Henry Tiandum of UMS and Glen Reynolds (Manager of the Danum valley Field Centre) has enabled logistical arrangements for transport and procurement of equipment and the hosting of the Canopy training course to run relatively smoothly. Most of the planning for the canopy training course was undertaken by the UK partners. Selection and notification of course participants was undertaken by the local partners in collaboration with Glen Reynolds.

The UK partners noted that during, and as a result of, the first training course the local partners have taken a stronger ownership of the project. A meeting was held at the end of the training course to plan the September workshop and it is clear that the local partners intend to lead in the planning and organisation of this project activity.

Good links have now been established between UMS and the ASEAN Region Centre for Biodiversity Conservation as two of the trainees on the course were from this Centre. The Chinese Academy of Sciences (CAS) also sent a participant on the course. An initial discussion has been held between the UK project partners and Gary Martin (Leader of Darwin Project in Sabah entitled 'Ethnobiology of proposed traditional use zones of Crocker Range Park') regarding the possibility of providing canopy training for some of the Crocker Range project local personell. Because of

this course we now have a very active collaboration with UMS and they have become the National Execution Agency for our planned 'Whole Forest Observatory (WFO)' project currently in development with UNEP. This Darwin funded project has greatly raised the capacity to support the WFO project which will establish a major canopy research facility in Malaysia as part of a growing network of such sites.

7. Impact and Sustainability

The profile of the project within Malaysia is not yet high but is growing. A press release was distributed to the national press that resulted in the publication of good articles in 2 Sabah newspapers. By training key local people in canopy research methods the project has already resulted in increased capacity for biodiversity research in Sabah. As a result, a number of projects being run at Danum Valley have incorporated a canopy element into their design. This has been made possible by the availability of trained canopy technicians and equipment at the site. It is intended that, by the end of the project, the local partner will have established a canopy training course on the Universiti Malaysia, Sabah curriculum and this will be eligible for national level funding. In this way Sabah will continue to strengthen capacity in canopy biodiversity research and conservation. The course has also engendered a sense of comradeship among the trainees who are now raising the profile of canopy research in their own institutions. The Chinese Academy of Sciences in Kunming, has now contacted the GCP with a view to starting a similar course in China in 2007.

8. Post-Project Follow up Activities

None applicable at this stage

9. Outputs, Outcomes and Dissemination

The following is a list of the differences in outputs against those agreed in the initial Project Implementation Timetable and the Project Outputs Schedule

Project Planning meeting in Sabah: According to the Project Implementation Timetable we had intended to have a project planning meeting in Sabah in October. As the project started late there was no time to involve international partners in this meeting and the local partners decided that they did not require a formal meeting. Instead, local institutions including the Institute of Tropical Biology and Conservation (ITBC), Danum Valley Management Committee (DVMC), Yayasan Sabah, the Royal Society South East Asian Rainforest Research Programme (SEARRP) and Sabah Forestry Department held various informal discussions and meetings about the project (coordinated by ITBC) and communicated remotely on a regular basis regarding the organisation of the canopy training course and the selection of participants.

No of people trained: 15 and not 16 Malaysians were trained to be canopy research trainers; 3 and not 4 ASEAN region nationals were trained to be canopy research trainers. Maryati Mohamed was intending to join the science trainees course but was unable to because of illness in the family, she will, however provide training inputs on future courses. A 4th participant from the Phillipines had intended to attend the canopy science training but was unable to attend due to illness.

General GCP press release on Canopy training: The GCP did not produce a general press release on canopy training but we did produce a press release on global canopy research in general that produced major newspaper articles in the Telegraph and the Guardian in the UK – these did not mention training.

Canopy Fellows Newsletter: A web site has been set up for the project but the canopy fellows newsletter – entitled 'Branching Out' - will shortly be produced and circulated. Material for the Newsletter has been gathered and the newsletter will be completed and circulated in the next quarter. The intention is to release 2

newsletters per year rather than an annual newsletter and to have a website that remains up to date with new developments in safe roped canopy access.

TV coverage of the canopy course: The press release in Malaysia did not attract local or National TV coverage. We had expected this to happen as that has been our experience in Brazil but it is possible that this will still happen on future courses. UMS sent a camera man on the course and produced a variety of film clips. These have yet to be used for any publicity activities but it is hoped that they will be used in the future.

No formal dissemination activities have yet been undertaken in-country. An article was produced in English and Malay about the course in March 2005 for publication in the Universiti Malaysia Sabah Newsletter (see annex 2). In the future local dissemination will be in the form of publication of results of some of the canopy student's field work in scientific journals as well as course advertisement through normal UMS channels.

Table 1. Project Outputs (According to Standard Output Measures)

Code No.	Quantity	Description
6A	18	A total of 15 Malaysian and 3 ASEAN region researchers and technicians trained to be trainers in forest canopy research.
6B	3 weeks	3 week canopy field course held
15A	1	National press release in Malaysia – resulting in 2 newspaper articles
15B	2	publicity articles in University and Sabah institution magazines

Table 2: Publications (Full text can be found in Annex 2)

Type	Detail	Publishers	Available from	Cost £
Newsletter	<i>Sabah Canopy Training Course, Sabah Malaysia by John Pike, in What's Up, Winter 2005</i>	<i>International Canopy Network, Evergreen State College, Washington, USA</i>	<i>http://www.evergreen.edu/ican/main/ican.html</i>	<i>\$30 to join ICAN</i>
Newsletter	<i>Kursus Latihan Kanopi Hutan Sabah by Henry Tiandun, in UMS Newsletter, March 2005</i>	<i>Universiti Malaysia Sabah, Kota Kinabalu</i>	<i>Obtain copies from Henry Tiandun on hbtandun@yahoo.com></i>	
Newspaper	<i>Life up on a forest canopy by Leonard Alaza, January 23 2005</i>	<i>The Borneo Post, Kota Kinabalu</i>	<i>Refer to newspaper or copy available from GCP – J.pike@globalcanopy.org</i>	
Newspaper	<i>Danum to host Asean's first forest canopy course by Bernama, January 15 2005</i>	<i>Daily Express, Kota Kinabalu</i>	<i>Refer to Newspaper or copy available from GCP – J.pike@globalcanopy.org</i>	
Newsletter	<i>Opening the forest canopy for ecological research</i>	<i>Bulletin of the British Ecological Society</i>	<i>Issue: 2005, Volume 36:2</i>	

10. Project Expenditure

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

<i>Item</i>	<i>Budget</i>	<i>Expenditure</i>	<i>Balance</i>
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We had a small overspend on the total budget of £18.21 which I have deducted from our claim in order to ensure that the total funds accruing to us do not exceed the original budget agreed by the Darwin Initiative.

For the year 2004-2005 we have overspent on salaries. This is because we had failed to budget for the costs of VAT and management fees on climbing trainer fees for Mr James Aldred and Mr John Pike who are hired through Rig Systems Ltd. The climbers must be hired through a UK specialist Rope-Access company so that they have the appropriate health and safety insurance for providing climbing training.

This has not caused a significant overspend in our total budget because we were able to make significant savings on travel costs. Due to the late start of the project (caused by late notification of funds availability from the Darwin Initiative) we did not undertake an initial planning meeting in Sabah – saving £1006.15. In addition we were able to negotiate sponsorship support from Royal Brunei Airlines for travel from the UK to Sabah resulting in a total saving of £231.13. Therefore the total underspend on travel was £1237.28.

In addition we had the following underspends:

- £25.46 on 'Postage telephone and stationery' due to lower bank charges than expected for telegraphic transfer of funds to Malaysia.
- £218.47 on printing costs as we printed the course manuals in-house and have not yet produced any reports for the project.
- £122.31 as we did not have to provide as much sundry equipment for the course as initially expected – the costs of photocopying materials for course participants was covered by Danum Valley Field Centre.

The overall movement of funds between budget headings is less than 10% of the total budget for the year so I hope that these virements are acceptable. I did email Carrie Haloun on 12th of January asking her whether this level of virement was acceptable but I received no response.

11. Monitoring, Evaluation and Lessons

The success of the training course this year has been demonstrated through the course report produced by the course leader and the climbing instructors (see annexes 3 and 4). We had also intended to ask participants to complete a questionnaire immediately following the course but this was overlooked because the GCP staff member who was responsible for this component (John Pike) was required to leave the course a few days early due to a family bereavement. A feedback meeting, however, was held at the end of the course providing participant's assessment of the course and ideas for changes to the structure of the next course. The course will be further assessed during the project workshop in September and course participants will be asked to complete a post course questionnaire at that time.

The key lesson that we have learned this year is that it is not possible to select any group of 6 fit field technicians and expect them all to have the skill, aptitude, attention to detail and concern for safety that is required for them to become climbing trainers themselves. We will build this into future plans for the course with the objective, at the end of the project, of providing Sabah with a team of 6 Malaysian climbing trainers who are suitably qualified to train others.

Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2003/2004

Project summary	Measurable indicators	Progress and achievements October 2004 – Mar 2005	Actions required/planned for next period
<p>Goal:</p> <p>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 the benefits arising out of the utilisation of genetic resources 			
<p>Purpose</p> <p>Build human capacity in Malaysia and other biodiversity rich nations in ASEAN region for investigating forest canopy biodiversity, its conservation, function, value and policy context.</p>	<p>A nationally recognised forest canopy research and conservation field course established in Sabah, Malaysia.</p> <p>Trainers trained.</p> <p>Potential leaders in canopy science and conservation trained.</p>	<p>Initial training for trainers has been commenced.</p>	<p>Prepare draft manual for the course.</p> <p>Place the course on the UMS curriculum</p> <p>Run a workshop to review the manual and provide input to future courses</p>
<p>Outputs</p> <p>Forest canopy research and conservation field course developed and established at University of Malaysia Sabah.</p>	<p>Field course structure and content developed.</p> <p>Field course adopted on University curriculum.</p>	<p>First three week canopy field course was held in Sabah.</p> <p>Climbing training programme for field course has been fully developed in accordance with British safety standards for working at Height.</p>	<p>Course placement on UMS curriculum.</p>

<p>Human capacity for training in canopy research and conservation developed.</p>	<p>10 local scientists and <u>6</u> climbers commit to forming a team of canopy trainers and receive training for trainers in canopy access, research methods and conservation.</p> <p>A minimum of <u>10</u> ecology teaching staff from outside Malaysia <u>trained in 04-06</u>.</p> <p>Minimum of 20 potential ecology trainers trained on the field course.</p>	<p>6 Malaysian and 3 ASEAN scientists and 8 climbers were trained on the first training for trainers course. All of the 6 Malaysian scientists have committed, in writing, to provide inputs to future courses. In addition Prof Maryati Mohamed is committed to providing teaching inputs to future courses.</p> <p>The selection of local scientist has provided a team that could teach most of the required science. A local trainer in ecophysiology, however, is required.</p> <p>Only 4 out of the 8 of the climbing trainers were considered suitable to become future (skilled and safe) climbing instructors.</p>	<p>Identify 1-2 Malaysians to add to the science trainer team to teach ecophysiology.</p> <p>Develop a strategy for increasing the local climbing trainer pool from 4 to 6.</p>
<p>Canopy training manual for the field course produced.</p>	<p>Draft manual in local language prepared, presented to workshop, approved and later finalised and printed.</p>	<p>Climbing section of manual has been fully drafted by the British climbing trainers.</p>	<p>Local trainers will prepare modules for the draft manual. A draft course manual will be collated with these modules and inputs from the British trainers.</p>
<p>New leaders in canopy science and conservation trained.</p>	<p>Minimum of <u>60</u> people trained in Malaysia in aspects of canopy science and its broader policy and conservation context.</p>	<p>18 people trained so far.</p>	<p>Commencement of selection of participants for the next course at the end of this reporting period.</p>

<p>Agreement of relevant national and regional institutions on a strategy for canopy training in the region</p>	<p>Workshop held for representatives of key Malaysian and regional institutions. Field course structure presented at this workshop and future strategy agreed.</p>	<p>Workshop report.</p>	<p>Relevant scientists willing to collaborate in the development of training programmes.</p>
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Images of the 2005 Sabah Canopy Training Course



'Training Course For Trainee Climbing Trainers' Students and trainers from week one of the Sabah course 2005.



'Training Course For Trainee Science Trainers' Students and trainers from week two of the Sabah course 2005



Students from Sabah and the Phillipines make their first high climb



Alex Karolus, a research assistant from DVFC embarks 50m up in a Dipterocarp



Dr Homathevi Rahman learns to fire lines into the canopy using a 'Big Shot' catapult.



Dr Xiaodong Yang from the Chinese Academy of Sciences checks a Malaise trap high in the canopy



Professor Roger Kitching (Course Leader) with Dr Henry Tiandun (Local course co-ordinator) 40m up in the canopy on their first high-climb

Annex 2: Publicity Articles

- **'Life up on a forest canopy' Borneo Post Jan 23rd 2005**
- **'Danum to host Asean's first forest canopy course' Bernama Jan 15th 2005**
- **'Kursus Latihan Kanopi Hutan Sabah' UMS Newsletter Mar 2005**
- **'Canopy Training Course, Sabah, Malaysia: ICAN Newsletter Winter 2005**
- **British Ecological Society Bulletin 2005, 36:2**

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Sabah Forest Canopy Training Course

UMS Newsletter 21/02/2005

By Henry Bernard and Idris Mohd Said

Malaysian tropical forests are amongst the tallest and the most biodiverse in the world, but despite these, Malaysia seems to lack the capacity of having local researchers who would know what exists in the canopy or how much value it has for mankind. Based on this realization, a forest canopy training course was organized in a pristine, lowland Dipterocarp rainforest within the famous Danum Valley Conservation Area located in Lahad Datu, Sabah.

The training course which took place from 17th January to 5th February 2005 is a pioneer collaboration between the GCP (Global Canopy Programme, UK), the Universiti Malaysia Sabah (represented by Institute for Tropical Biology and Conservation), Yayasan Sabah and the Royal Society South-East Asian Rainforest Research Programme. The course is part of a three year programme funded by the UK Government's Darwin Initiative. The aim of the programme is to train scientists to build their capacity in forest canopy research in Malaysia and the ASEAN region. This is achieved through training a new generation of climbing and science instructors who can then train others to work in this complex but exciting and rewarding habitat.

This first successfully completed training course at Danum Valley saw the participations of altogether 17 participants consisting of postgraduate students, research assistants, senior scientists and forest managers from Institute for Tropical Biology and Conservation, UMS, School of Science and Technology, UMS, Yayasan Sabah, Xishuangbanna Tropical Gardens (Chinese Academy of Sciences), China and ASEAN Regional Centre for Biodiversity Conservation (ARCBC) in the Philippines.

The course was organized by the GCP and conducted in the field by Canopy Access Limited,

a UK-based specialist rope-access company, who work in collaboration with the GCP. This course is the first in the world to be independently audited and to teach new access methods compliant with current British and European Safety Standards for work at height. The course included instruction in rope access techniques, emergency procedures, casualty assessment and stabilization, ground-based and aerial rescue, line installation, hazard assessment, canopy rigging and work planning. All participants passed the strict assessment and attained the Basic Canopy Access Proficiency (or BCAP) certificate.

Following this first successful course, two subsequent BCAP courses will be conducted in 2006 and 2007 respectively. This year's certified BCAP trainees will return to help teach more students to carry out scientific research work in the canopy. In addition, the present trainees themselves will follow an Advance level Canopy Access Proficiency course (or ACAP). Preparatory work is already in progress. Plans have been prepared to hold a workshop in September 2005 at the Institute for Tropical Biology and Conservation, UMS. The main tasks of the workshop are to prepare a canopy training programme and to develop a canopy training manual by local trainers. In the September workshop, a demonstration of tree climbing techniques, as well as an exhibition on the first BCAP training activities will be organized.

It is envisaged that when all of the canopy training courses are completed by year 2007, Universiti Malaysia Sabah will emerge as one of the first institutes of higher learning in Malaysia, as well as in the ASEAN region, which has the capacity to not only conduct scientific research in the 'last frontier' of forest science – the rainforest canopy, but also to train others in the ASEAN region to do the same. The ultimate goal is to

better understand the rainforest canopy sub-ecosystem and therefore the importance for its conservation.

Feature: Tropical Ecology

Bulletin of the British Ecological Society 2005 36:2



Climbing instructor James Aldred ascending a 70 m dipterocarp with a student during the recent Borneo course. Photo copyright: John Pike.



Climbing instructor John Pike ascending a 70 m Bornean dipterocarp in the early morning mist. Photo copyright: James Aldred.

Opening the forest canopy for ecological research

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The rainforest canopy is one of the richest, least known and most threatened habitats on the Earth's surface. As a reservoir for 40% of the world's biodiversity it is un-paralleled in the terrestrial sphere and represents a vital interface between the biosphere and the atmosphere over 45 million hectares of land (Ozanne et al., 2003). Although there is considerable interest in studying this complex and exciting habitat, it has always proved difficult and costly. Most of our knowledge concerning biodiversity and forest function has come from ground-based studies with only a small number of tree crowns readily accessible in the UK. Strict UK and European legislation and the lack of formal safety procedures have kept the canopy closed to all but a small, pioneering minority.

Rope access is a relatively cheap and efficient way for plant and animal ecologists to study the canopy but until now the potential hazards and lack of formal training systems have kept this environment well out of reach to most researchers. Past methods, using caving or mountaineering equipment, offer inadequate safety margins under UK employment law and with university safety departments forced to treat canopy science as work and not sport, the HSE guidelines are clear. Even arborist techniques used by UK tree surgeons are usually not appropriate in tropical trees. The unique challenges,

hazards and situations of tropical canopy work require a tailored and specialist training system.

Training to 'Basic Canopy Access Proficiency' (BCAP) level requires a 5-day practical course, available from the Global Canopy Programme in Oxford in collaboration with specialist rope access providers. The syllabus includes: formal training in climbing and rigging techniques, kit testing and inspection, hazard assessment, line installation, platform building, ground-based and aerial rescue, casualty management, medical care and many other skills. The training programme complies with all relevant British and European legislation.

The Global Canopy Programme runs courses in the UK for British researchers and students, and in Borneo for ASEAN scientists and in Brazil for Latin American scientists. In the UK over the last year the GCP has trained scientists from 12 institutions in canopy access as well as a pioneering student expedition to the Sri Lankan Cloud forest.

For further information please contact: John Pike, e-mail: j.pike@globalcanopy.org or web-site: www.globalcanopy.org.

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Claire MacDonald and Kerry Falber from the University of Leeds training in aerial rescue on a UK canopy course. Photo copyright: John Pike.



GLOBAL CANOPY PROGRAMME UPDATE

CANOPY TRAINING COURSE - SABAH, MALAYSIA

The GCP's first Sabah Canopy Training course took place last month in Danum Valley, Borneo. The course trained 18 scientists and technicians from Malaysia, the Phillipines and China to carry out and support research in ASEAN (Association of southeast Asian nations) region countries.

The course is a pioneering collaboration between the GCP, the Universiti Malaysia Sabah, Yayasan Sabah and the Royal Society South East Asian Rainforest Research Programme. Funding is supported for three years by the UK Government's Darwin Initiative. The aim of the project is to build capacity for studying the forest canopy in ASEAN region countries through training a new generation of climbing and science instructors. They can then train others to work in this complex but rewarding habitat. The course follows the great success of the GCP's Brazilian canopy training course which has been instrumental in building awareness and capacity for studying this rich and understudied habitat in South America.

The GCP course is the first in the world to be independently audited and to teach new access methods compliant with current British and European Safety Standards for work at height. The GCP hopes that institutions requiring their employees to undertake canopy research will in the future adopt these new techniques as part of their health and safety policy.

The 2005 course took place between 17th January and 5th February in a reserve of pristine, lowland Dipterocarp rainforest adjacent to Danum Valley Field Centre, Sabah. This is the tallest rainforest in the world with emergent trees rising to heights

of over 80m. The course included instruction in: rope access techniques, emergency procedures, casualty assessment and stabilization, ground-based and aerial rescue, line installation, hazard assessment, canopy rigging and work planning. All participants passed the strict assessment and attained the Basic Canopy Access Proficiency (BCAP) award.

In the first week, 8 research assistants from the Danum Valley Field Centre and the Universiti Malaysia, Sabah received instruction from Canopy Access Limited, a UK specialist rope-access company working in collaboration with the GCP.

In week two, 9 senior scientists and forest managers from the Universiti Malaysia Sabah, Yayasan Sabah, Xishuangbanna Tropical Gardens (Chinese Academy of Sciences), China, Griffith University, Australia and the ASEAN Regional Centre for Biodiversity Conservation (ARCBC) in the Philippines,

were also trained to BCAP level. They also received concurrent lectures on the state of canopy science from Professor Roger Kitching, a biodiversity specialist from Griffith University, Australia and Dr James Morison, an ecophysiologicalist from Essex University, U.K.

Initial training was carried out at low-levels on small trees adjacent to the Danum Valley Field Centre, but all participants also climbed high into the canopy, scaling epiphyte rich dipterocarps to heights of 45m. The training site was particularly rich in wildlife with frequent incidences of Orangutans and other primates watching the climbers from nearby branches.



Dr Xiaodong Yang from China checks a Malaise trap at 40m

Week three saw all participants learning and practicing the practical skills needed to carry out science in the canopy, placing traps high in the trees and discussing the possibilities for future canopy research in their respective countries.

This was the first of three courses to be run by the Global Canopy Programme and funded by the Darwin Initiative. In years two and three, this year's graduates will return to help train many more students to carry out work in the canopy of ASEAN countries. It is the belief of all involved that these courses



Alex Karolus from Danum Valley on his first canopy climb

will follow the success of the Brazilian model, generating excitement in and capacity to carry out high level research in the rainforest canopy.

If you would like to participate in or host a course please contact John Pike
sjpike@globalcanopy.org

For further information please see our website
www.globalcanopy.org/training

CONTRIBUTE TO WHAT'S UP?

The International Canopy Network (ICAN) is currently seeking articles and information for the upcoming issue of *What's Up?*, set for publication in June, 2005. ICAN accepts articles, meeting, workshop and job announcements, relevant website addresses, and citations. Contributions can be sent via e-mail attachment, fax, or snail mail. Articles up to 1500 words are accepted (WORD format preferred) and graphics are welcomed. The deadline for submissions is May 15, 2005. For further information or to send contributions, please contact the ICAN office:

Hannah Anderson - Program Administrator/Editorial Assistant;
 2103 Harrison Avenue NW, PMB 612, Olympia, WA 98502;
 (360) 867-6788; canopy@evergreen.edu.

BRAZILIAN GOVERNMENT OFFICIALLY ENDORSES THE OURO PRETO DECLARATION ON BRAZILIAN FOREST CANOPIES, BIODIVERSITY AND CLIMATE CHANGE

In June 2004, the International Workshop on Forest Canopy Research in Brazil: Training in Canopy Ecology and Biodiversity Conservation, was held in Ouro Preto, Brazil. The workshop body drafted the The Ouro Preto Declaration on Brazilian Forest Canopies, Biodiversity and Climate Change. It was signed by representatives from more than 30 Universities and forest and environment related institutions in Brazil. The declaration recognizes the importance of forest canopies and calls for further development of canopy research and training in Brazil.

Soon after the workshop, the declaration was sent to the Ministry of Science and Technology in Brazil and also to the Secretariat of the Convention on Biological Diversity in Montreal. On 13th of December 2004 the Brazilian Ministry of Science and Technology responded by fully endorsing the declaration and will support canopy biodiversity research in Brazil. They included a three-page letter from the biodiversity section of the Ministry that further emphasized the importance of forest canopies and called for the Ministry to support these efforts. In particular they highlighted the importance of forest canopy research for studying regional and global hydrology, carbon dynamics and climate change. In addition, it emphasized the need for canopy data to improve the interpretation of satellite imagery that can then be used to examine the interactions between Amazonian forest cover, carbon storage and climate change. The GCP will post a copy of the letter on their website as soon as it has been translated into English.

The full text of the declaration can be viewed at
www.globalcanopy.org/news

Annex 3 – Course report by Roger Kitching (Course leader)

Annex 4 – Course report by John Pike (Climbing instructor)