

Darwin Initiative: Half Year Report

(due 31 October 2007)

Project Ref. No.	162/16/005
Project Title	Biodiversity inventory and monitoring for conservation of threatened Sumatran forest
Country(ies)	Indonesia
UK Organisation	The RSPB
Collaborator(s)	Royal Botanic Gardens, Kew FORRU FORDA Bogor Herbarium
Project Leader	<i>Jeremy Lindsay</i>
Report date	<i>31 October 2008</i>
Report No. (HYR 1/2/3/4)	<i>HYR2</i>
Project website	<i>www.harapanrainforest.org</i>

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

1. Progress with staffing and training

The lead scientist, David Lee (DL), undertook a four week intensive language training course on Java at the outset of this reporting period and is now proficient with his language skills so he can operate independently of translators in all areas of his work. He now also has an Indonesian counterpart appointed, Willy Rombang. Willy has considerable experience working in ecology and conservation in Indonesia. Two other key staff under DL's management are Paul Hultera, a GIS specialist, and Yafid Gunawan who spends c. 50% of his time with DL, primarily managing the herbarium, library and research equipment. A number of surveys have begun with members of the forest patrol staff. None of these staff have any previous experience in surveying biodiversity, and the progress made here is noticeably developing the project's skill base and capacity. A number of the staff have emerged as being particularly skilled at work in the forest and having an aptitude for the kinds of work required in biological survey and monitoring.

Summary of training given. Three forest patrol staff have been trained in hornbill survey techniques and eight staff in methods to search for potential hornbill nesting trees. Six staff have received training in mammal survey methods and six, including some of the same, have received map-reading and GPS skills training. One staff has received specific training in the deployment and operation of automatic cameras. Urip Wiharjo, our restoration officer, participated in the International Tropical Timber Organisation and Ministry of Forestry's training for criteria for sustainable forestry and DL undertook a four weeks language training course. Paul Hultera, the GIS officer, spent three days in June with the South Sumatra Forest Fire Management Project, Palembang, learning about capturing (collecting), storing (management) and analysing forest fire (MODIS hotspot) data.

2. Progress with survey design and implementation

Herbarium and library. Accommodation for a botanical specimen collection is largely completed, consisting of two shipping containers arranged side by side with a roof over the intervening space. One container has been air conditioned to provide climate control for Harapan Rainforest's herbarium specimens. Herbarium specimens have been moved from the project offices, where there is 24 hour air conditioning, to the fully-functioning on-site herbarium. Duplicates specimens are with Kew in London and Bogor Herbarium. This building will also function as a focus of research and monitoring activities and will be able to house others materials besides the herbarium collection providing they are compatible. It is planned to air-condition the covered space between the two containers so that classroom training and research meetings can take place there. The second container is being developed into an on-site library (and research equipment store). The library consists of books, paper copies of journals, and will include a wireless-connected laptop that will hold electronic journals, along with biological data useful for visiting researchers. A reference library of plaster casts of animal footprints has been started.

Hornbill surveys. Two further hornbill supra-transects have been surveyed, one of 21km and one of 26km running the length and width of the site, respectively. Six of the nine Sumatran hornbill species were recorded from these two transects, and simple relative abundance measures have been calculated for these species. These surveys involved eight project staff, three of whom were new trainees.

Mammal surveys. The methods for mammal surveys are largely finalised. The main emphasis is on following methods that are being implemented across Sumatra concentrating on assessing tiger prey distribution. This is an internationally recognised and standard method for assessing a key correlate of tiger abundance. The method entails recording the presence (from direct observations and signs) of tiger prey species in a grid of sample squares. Each square is 3.6 by 3.6 km and is divided into quarters with each quarter taking one day to survey. Two squares have been surveyed as part of the mammal survey training programme and evidence of the Critically Endangered Sumatran Tiger *Panthera tigris sumatrae* was recorded twice in one of these squares during this time. Six forest patrol staff members were introduced to the method and trained in mammal sign identification. This training will be continued over the coming months, including a formal week-long training course in mammal survey techniques in December 2008, drawing on expertise from the Wildlife Conservation Society. Tiger prey surveys will be complemented by line transect surveys to cover arboreal and more visible species and supplemented with automatic camera surveys. Ten automatic cameras have been purchased (Reconyx Rapidfire RC55) and are undergoing field trials at present with very encouraging results: 10 mammal species has so far been recorded by the cameras, including Mitred Langur *Presbytis melalophos* and Sunda Pangolin *Manis javanicus*, both recently uplisted by IUCN to Endangered, and Bearded Pig *Sus barbatus* and Pig-tailed Macaque *Macaca nemestrina*, both now listed as Vulnerable.

Habitat surveys. An intensive tree inventory and some habitat structure data are being collected from survey plots across the concession in order to fulfil the requirements specified by the Ministry of Forestry (MoF) under the terms of the concession agreement. Although the design and methods of this rapid assessment survey are specified by the MoF and it has, by definition, to be implemented extremely rapidly, it will nonetheless provide an extremely valuable dataset on tree species diversity and distributions, approximate stocking levels (and

carbon density), regeneration potential, levels of human impacts and ground-truthing data for remote sensing interpretation. Tree identification expertise for this exercise is being provided by Bogor Herbarium who will train six Harapan staff. To date, 55 of c. 350 plots have been completed. We propose to revisit a sample of these plots in order to assess the accuracy of data collection. These surveys are also being used for training in habitat survey methods and capacity building.

A further requirement under the licence agreement is to establish a series of 1 hectare permanent sample plots stratified by forest cover type (high, medium and low density canopy cover). These requirements fit our own interests closely and will allow for some verification of the wide scale rapid survey discussed above. These plots will be integrated with the design for the mammal and bird surveys.

All observations of important mammal species are being geo-referenced for a database and site species lists have been developed and updated for trees, mammals and birds. To date, 290 bird species have been recorded in Harapan Rainforest, with 15 of these being new site records added in 2008. One of these is of conservation concern - Olive-backed Woodpecker *Dinopium rafflesii* listed as Near-Threatened. There have been three recent records of the most threatened bird on the site, Storm's Stork *Ciconia stormi* (Endangered), all from the same general location that initial surveys suggest may contain suitable swamp forest habitat for this important species. Further species-specific surveys are planned. Forty-three species of reptiles and amphibians are recorded to date, including one new snake species (Golden-ringed Cat Snake *Boiga dendrophila*) in the last six months. Of the 54 mammal species with recent records in the site, no less than 25 are considered of conservation concern in the recent IUCN redlisting (2008) so that there are now 1 Critical, 8 Endangered, 9 Vulnerable and 7 near-threatened species. In the last six months, forest patrols have recorded Sumatran Tiger on 19 occasions in addition to the records mentioned above.

3. Progress with consultation and research collaborations

Pak Ismail, of Bogor Herbarium, is working with Yafid, our herbarium officer, in our herbarium, classifying some of the specimens. He has also spent some time in the surrounding forest and added considerably to our current botanical list. DL met with the Singapore Hornbill Project to discuss a hornbill nest box scheme at Harapan Rainforest and has been in communication with various other regional specialists concerning field methods for survey work and specific surveys. These include Simba Chan (Senior Conservation Manager at BirdLife's Asia Division) for forest waterbirds; Burung Indonesia for bird survey techniques; Nick Brickle at Wildlife Conservation Society for mammal survey techniques and from this designing our mammal survey design to fit in with Sumatra-wide methods used by a number of conservation organisations; Susan Cheyne, of the Sebangau Gibbon Behavioural Ecology Project and WildCru (Oxford) for help with gibbon surveying; and Malaysian Nature Society and Philippine Biodiversity Conservation Program in connection with hornbill work. Matt Struebig of the Kalimantan Bat Conservation Project is hoping to visit the site in February 2009 to run some bat survey training along with LIPI counterparts, for species inventories and to develop research into the role that bats may play as seed dispersers in forest regeneration on the site. Fangyuan Hua from the University of Florida conducted two-months of fieldwork in preparation for her PhD on bird communities and forest recovery. She will return in spring 2009 to continue her research. Mr Simba Chan, Senior Conservation Officer at BirdLife International Asia Division, accompanied Miss Fangyuan Hua in a consultancy role. He is producing a guide to forest waterbirds for the project to help develop the bird identification skills of forest patrol staff, and particularly to aid them in accurately identifying Storm's Stork. Two researchers from the Southeast Asia Regional Programme of the World Agroforestry

Centre (ICRAF) visited the site to assess whether it is a suitable study site for their Sumatran research on tree distributions at the landscape scale. They are currently finalising the report on their findings. Dr Bambang Irawan, forestry lecturer in the Department of Agriculture at University of Jambi, has visited the site twice. His PhD was in *Eusideroxylon zwageri* ('Bulian', ironwood) in Jambi and he has offered advice to our nursery staff on germinating this important species. Dr Rosyani, who also works in the Department of Agriculture and focuses on human ecology and landscape ecology, has also visited the site. DL is developing contacts in Sriwijaya University, Palembang, in order to invite research projects and to recruit graduate biologists into the survey work. Three staff from the Ministry of Forestry's Research and Development Agency carried out an update on previous research into flora, fauna and forest management on a plots set up under the previous logging concession. J. Lindsell (Darwin project leader) and D. Gibbons (Head of Conservation Science, RSPB) visited the site for a 10 day trip in September 2008. One significant output from this visit was the development of a long-term research and monitoring plan to guide the work of the project, and in particular the research centre being established under this Darwin.

Ian Rowland (Tropical Forest Conservation Manager, RSPB) has visited Harapan Rainforest twice during the reporting period, for two weeks on each occasion, in April and June 2008. During the April visit, he facilitated the visit of a forest carbon expert to begin evaluations into the carbon storage and sequestration capacity at Harapan Rainforest.

Publicity. Sean Marron, the executive head of the Harapan Rainforest Initiative, gave a presentation at a conference convened by the Forest Research and Restoration Unit in Chiang Mai in April. This resulted in agreement to translate into Indonesian the Darwin Initiative-funded FORRU book "*How to Plant a Forest: The principles and practice of restoring tropical forests*", which will help inform the project's staff and others in Indonesia of innovative and regionally important forest restoration techniques. The site was visited by the Indonesian Minister of Forestry on 19th September with the Director General of Production Forestry and Director of Natural Forests. The Harapan Rainforest Initiative is one of only three projects featured on HRH The Prince of Wales' Rainforest Project website: www.princesrainforestsproject.org

Response to specific comments from the first annual report:

1. A proposal for forest restoration is currently with the ITTO focal point in the Ministry of Forestry, though, as indicated in previous correspondence with Darwin, undertaking forest restoration is not the specific focus of this Darwin project.
2. We have initiated contact with Danum, but to date have not had a response, though this remains an important priority for us.
3. As indicated above, at present we are prioritising contacts with Universities on Sumatra rather than off island but will continue to develop our in-country contacts as suggested, such as University of Gajah Mada.
4. This half yearly report is more comprehensive than normal.
5. Copy of MOU with Yayasan KEHI is attached.

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

Current monitoring requirements of the Ministry of Forestry (MoF) for production forest concessions which are being applied to Harapan Rainforest have proved to be extremely demanding. This has added considerably to the project's workload in the last 6 months, which has prevented faster progress with the biological surveys. Many aspects of the MoF monitoring

methods are compatible with the Darwin project goals, so every effort is being made align the two in order to avoid duplication of effort and ensure they are implemented effectively. This gives us an opportunity to assess the MoF methods to some extent. Since this is the first restoration licence, the MoF are using it as a trial base and the regulation is expected to evolve over time. Our relations with MoF are enabling us to have a specific direct input into some of these changes at a very senior level, which is a positive development.

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

Discussed with the DI Secretariat: **no/yes, in..... (month/yr)**

Changes to the project schedule/workplan: **no/yes, in.....(month/yr)**

3. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures?

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

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

Please send your **completed form email** to Eilidh Young, Darwin Initiative M&E Programme at Darwin-Projects@ectf-ed.org.uk . The report should be between 1-2 pages maximum. **Please state your project reference number in the header of your email message eg Subject: 14-075 Darwin Half Year Report**