Darwin Initiative Annual Report

Important note:

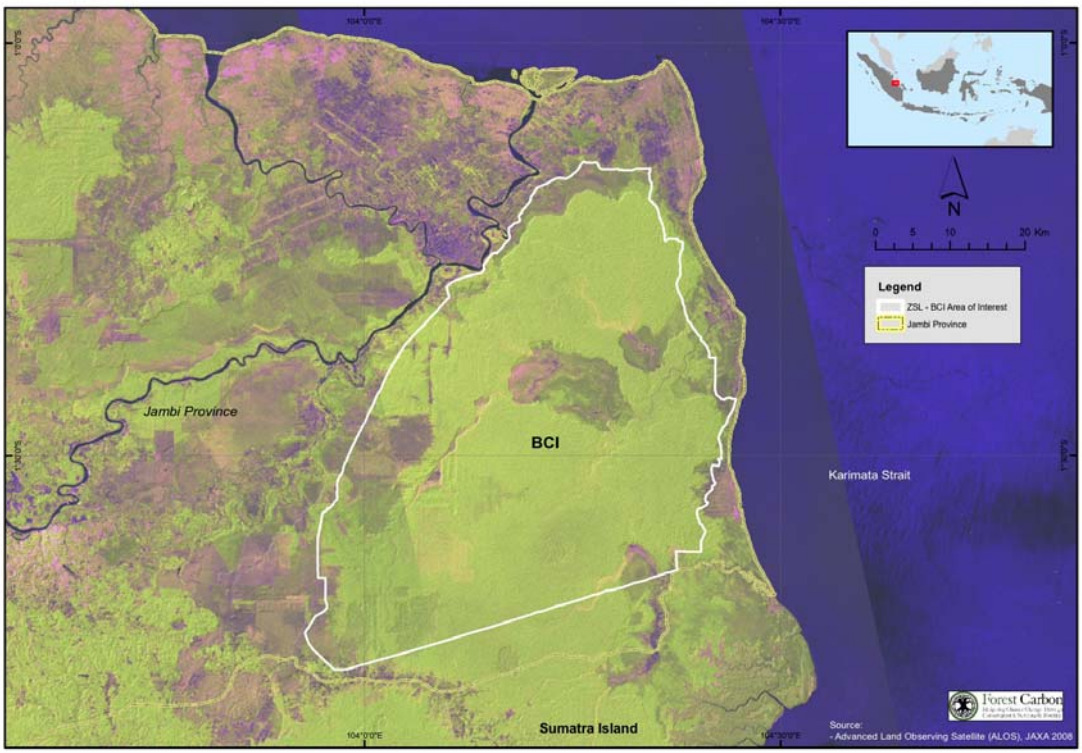
Darwin Project Information

Project Ref Number	17-029
Project Title	Berbak to the Future: Harnessing carbon to conserve biodiversity, Indonesia
Country(ies)	Indonesia
UK Contract Holder Institution	Zoological Society of London
Host country Partner Institution(s)	Zoological Society of London Indonesia Programme
Other Partner Institution(s)	Department of Forestry, Indonesia
Darwin Grant Value	£ 298,068
Start/End dates of Project	1 April 2009 / 31 March 2012
Reporting period (1 Apr 200x to 31 Mar 200y) and annual report number (1,2,3..)	1 April 2009 to 31 March 2010 (Annual report No. 1)
Project Leader Name	Dr. Thomas Maddox
Project website	http://www.zsl.org/conservation/regions/asia/indonesia/ / Photos can be seen at http://picasaweb.google.com/zslindonesia
Author(s) and main contributors, date	Dr. Thomas Maddox, April 23rd 2010

1. Project Background

The Berbak ecosystem in eastern Sumatra, Indonesia comprises about 240,000 hectares of predominantly peat swamp forest. It is listed as a Ramsar site and is important habitat for a range of critically endangered wildlife species including the Sumatran tiger, false ghavial and a range of migratory and sedentary bird species. About two thirds of the area is classified as conservation forest (under the definitions of National Park, Forest Park (*TAHURA*) and protection forest (*hutan lindung*)) and one third is allocated to production forest which is divided into two concessions. The first concession is controlled by a logging company called PT Putra Duta and the second is currently vacant. A range of local communities rely both officially and unofficially on forest resources. Over the past twenty years the Berbak region has experienced massive forest loss, threatening wildlife and local livelihoods and also releasing huge volumes of carbon. ZSL's Berbak Carbon Initiative (BCI) aims to conserve the Berbak Ecosystem by creating a financial incentive to stop forest clearance through emerging carbon markets. By the end of the project we aim to have collected all of the baseline data and removed all of the barriers required to allow forest carbon rights holders to access voluntary and hopefully compliance markets for selling carbon credits generated by tackling deforestation. If successful we hope this project will form a model for how conservation areas in particular can access carbon markets to finance their survival. The Darwin grant forms the core of the project, but supplementary funding also comes from smaller donors interested in tiger conservation and integrating social values into the larger project.

Figure 1 - Location of the ZSL Berbak Carbon Initiative and its constituent forest blocks



2. Project Partnerships

Project partnerships: The Zoological Society of London (ZSL) is the UK lead institution whilst in Indonesia the project is implemented by ZSL's Indonesian Programme, which is registered with the Indonesian government as a recognised NGO working in Indonesia, in partnership with the Department of Forestry, particularly the management of Berbak National Park which covers a large part of the Berbak ecosystem. ZSL London's main role is to give advice and coordination through the South and South East Asia Programme and to pay the salary of the principle coordinator for ZSL Indonesia. Coordination between ZSL London and ZSL Indonesia is conducted on a daily basis through email and a visit from the Programme Manager and Director of Conservation in March 2010 demonstrated ZSL London's support for the Berbak project.

All planning, fundraising and daily management of the project is carried out by ZSL Indonesia staff, in particular Dr. Thomas Maddox and Dolly Priatna (ZSL Indonesia Coordinators) and Dr. Agus Suratno and Dicky Purwanto (the Berbak Carbon Initiative project manager and field manager respectively). Dr. Suratno was hired instead of Varma Kaavya who was listed in the original grant application after Ms. Kaavya was offered an alternative position before the grant started. Dr. Suratno is an Indonesian national who has just completed a Masters and PhD. in the USA on forestry and has proved to be an excellent project manager. Dicky Purwanto joined the project in early 2010 after running a Sumatran tiger project, replacing Ichlas Al-Zaqie who was also listed in the original application, but was 'headhunted' by another NGO in December 2009. Project staff are split between offices in Bogor, Jambi and the Berbak field office but all meet on a regular basis.

The relationship with the Ministry of Forestry is still being formalised through an MoU with the Department for Forest Conservation which has now been under negotiation for well over one year thanks to new regulations and staff changeovers. A recent visit by the ZSL Director of Conservation furthered our cause and we are assured the MoU is now in its final stages before signing. Dr. Suratno has spent much of his time developing this relationship which is essential for the project's success and we now have good support from the Directorates of Biodiversity Conservation and Ecosystem Services, from the Director Generals of Forest Conservation (PHKA) and Production Forest Development (BPK), from the Department of Forest Research

(FORDA) and we even had a personal message of support from the new Minister of Forestry in March 2010. On the ground our relationship with Berbak National Park is also very strong, with a senior member of the Park management assigned to work as the counterpart to the project on a part time basis. Since the grant was awarded the head of the National Park has been changed, with Bapak Francisco Moga taking over from Bapak Tedi Sutiedi. Pak Moga has been as supportive if not more so than Pak Tedi and has joined the team in the field on several occasions and received substantial media coverage of his support. We are further cementing the relationship by building a joint project 'operations room' at the Berbak National Park office using funding from the USFWS so that Park staff remain at the centre of activities.

We also have a long standing and strong relationship with the Department of Natural Resources Conservation (BKSDA) Jambi office, with the head of BKSDA a strong advocator of REDD and, together with Pak Moga, they have been our primary route of contact with Jambi regional government.

Other collaborations: The BCI includes numerous other collaborations. Only the key collaborations formalised by MoUs are listed here:

Gita Buana and WALESTRA: Both local social NGOs based in Jambi. An MoU has been signed with Gita Buana based on similar interests and some joint REDD-socialisation work has been conducted whilst WALESTRA, a spin off from the FLEGT pilot project in Jambi, is now taking the lead on the social objectives of the Darwin grant through a sub-contract, initially defining who and where the 'Berbak community' is.

GTZ Merang Project: The GTZ-funded Merang project lies in the neighbouring province and is aiming to do very similar work to the Berbak Carbon Initiative. The Merang project is far more advanced in terms of developing the institutional framework required for a carbon finance project, but has carried out little work on the biodiversity implications where they would like assistance from ZSL. We have now signed an MoU on sharing information and the Merang project staff represent one of our key resources for discussing plans and approaches.

ERM (Environmental Resource Management): ERM Indonesia and the ERM Foundation have continued to provide support and advice to the project and an MoU was signed in 2009. In particular ERM have been putting us in touch with potential investors to help guide the project development.

LIPI (Indonesian Institute of Sciences) – A long time collaborator of ZSL's oil palm work in Indonesia, LIPI have just signed an MoU with ZSL to further collaboration on our other projects including the Berbak Carbon Initiative

Forest Carbon – Forest Carbon are a Jakarta-based environmental consultancy with expertise in forest carbon markets, avoided deforestation and available standards. After a long tender process they were chosen as the key partner to conduct the GIS-modelling required to produce baseline estimates of carbon emissions as well as advice on project development. Contracting Forest Carbon to carry out this work required a slight change in the proposal and budget and this was approved through the formal notification process by Darwin Initiative in late 2009.

No formal relationships have yet been established with regional government, but we have a good informal relationship with the Provincial Forestry Service (DINAS Kehutanan) and have been building relationships with County level forestry services (DINAS Kabupaten). We have also introduced the project concept to the Provincial Governor during a joint event with the British Embassy in Jakarta (see section x for further details). Finally we also have a good relationship with the FLEGT Jambi office who have shared data with us.

The Indonesian CBD representative has been identified and updated on project activities but as yet we have not had a response. CBD responsibilities lie within the Ministry of Environment rather than the Ministry of Forestry where we are still working to build contacts.

3. Project progress

Overview

Whilst not a requested requirement of the report, we felt it important to start this section with a brief overview of progress. Overall we are happy that we are on course for meeting the overall

project goal. However, it is worth noting that in some ways we are working towards a moving target. Very few carbon-based biodiversity projects exist at this point on which to model ourselves and the compliance markets at which we are aiming are still yet to take shape. During our first year new laws relating to carbon markets have been released in Indonesia, although there is still no clear overall framework on how such projects will be allowed to operate and further laws are said to be in the pipeline. We have also had the Copenhagen Convention of the Parties of the UNFCCC which failed to make the progress hoped, with some developments on REDD but very little on the overall framework in which it will have to operate. As such we have made better progress than planned on some of the activities, including completing activities not planned until year 3, whilst others have not been completed and may now be irrelevant to the overall goals.

There were two particular changes to the original proposal. The first was the recognition of the need for an independent assessment of the feasibility of our proposal. Usually these are done to justify initial investment and since we have no formal investors we thought we could skip this step and work towards a final project design document from the outset. However, it soon became apparent that we needed guidance on the various avenues open to us but also we wanted to confirm the project was viable as early as possible. As a result we submitted a request to Darwin to adjust the budget and collaborated with forest carbon market experts 'Forest Carbon' who carried out the GIS baseline modelling and incorporated this into an overall independent desktop analysis or feasibility report of our proposal.

The second change was our realisation of the importance of politics in project establishment. With no clear legislative framework in Indonesia there are various groups vying for position on REDD and many potential projects and investors. Even within government it is not yet clear which department or sub-department or even region (central or local) has overall responsibility and there is even contradictory legislation being released. As a relatively small and new NGO in Indonesia we found we needed to place a huge amount of effort into politicking to get the support and advice that is essential if the Berbak Initiative is going to succeed. The appointment of Dr. Agus Suratno as project manager was a crucial step here. As an ex-government employee Dr. Suratno already had a good list of contacts, but he has spent the vast majority of his time with us working in Jakarta on getting the project recognised and approved in all relevant sections of government and negotiating the tangled path that should lead to final project establishment, although quantifying his efforts is a little difficult.

A variety of documents, photos and video related to the project have been filed online with Dropbox with a sharing invitation sent to Eilidh Young. Additional photographs are available at http://picasaweb.google.com/zslindonesia.

3.1 Progress in carrying out project activities

Output 1: Establishment of an institutional framework

Activity 1.1 and 1.2 – Define/confirm project boundaries:

A variety of data sources exist describing the forest management zones around Berbak, almost none of which match and with no clear government department 'trumping' another. In the end we have settled on using data from the Balai Informasi Pemutaan Hutan (BIPHUT) as the base information, but boundaries for the production forests were also obtained directly from the companies themselves, which actually reduces the expected project area by about 8000 hectares. Analysis of baselines was therefore carried out using the total project area based on BIPHUT data as well as on individual concession maps, despite the totals not matching. The final project baselines are defined in the desktop analysis report (Output 2).

Activity 1.3 – Provide introductory training on REDD to stakeholders:

Initial work on REDD training led to attendance of a conference in Jakarta hosted by Conservation International on REDD training which revealed that CI were already at an advanced stage in producing an online training resource on REDD. We compared notes and CI staff said we were welcome to use their training modules. English speaking members of the project thus went through these at the time, but Indonesian speakers have had to wait for translations to become available. These recently came online at www.conservationtraining.org and so far have been used by ZSL Indonesia staff and National Park staff. Additional training

for Project Manager Agus Suratno was also gained through attendance of the UNFCCC meeting in Copenhagen in December. Agus travelled under ZSL's banner, but soon became part of the Indonesian delegation where he made many important links that were later used to support project progress. Efforts were also made at an early stage to bring the National Park management up to speed on REDD. This included bringing the head of the national park and the ZSL Field Manager to an REDD conference in Bali which greatly boosted his own knowledge and understanding, but also his standing amongst his colleagues in the Ministry (as the only park head in attendance) and thus his support for our objectives. Furthermore, we have been collaborating with Gita Buana to start the process of introducing REDD to Berbak communities. In a joint REDD road show, three villages were visited (with seven villages attending) and given presentations and 900 specially designed calendars with photos from the project and a brief description of what we do were distributed (calendars being very popular as a way of decorating houses, thus also spreading the word of the project). A photograph of the calendar is included in the online materials supporting the report. Finally, we also interpreted the REDD training activity as being to socialise REDD and the project to key government entities, in particular local Jambi government. At the end of March 2009, therefore, we also held a large event in conjunction with the British Embassy in Jakarta for introducing the Berbak Initiative to an audience of government, NGOs and carbon investors. The event began with a visit by the British Ambassador to Jambi where a joint meeting was held with the Governor of Jambi, the British Embassy and ZSL, followed by a three day visit to the field by the Ambassador and a number of senior Jambi government officials. Upon our return, the British Embassy then hosted an evening event to which about sixty government, NGO and carbon investment professionals were invited. The evening opened with the special advisor to the new Minister of Forestry reading a message of support from the Minister and was followed by a film about the Berbak ecosystem produced for ZSL by InFocusAsia. This was followed with short presentations on the project status and future and then drinks and discussion.

Photographs of socialisation work with communities around Berbak and also the Ambassador's visit and the British Embassy event are available at:

http://picasaweb.google.com/zslindonesia

Photographs from the British Embassy's coverage of the event are available at:

http://www.flickr.com/photos/ukinindonesia/sets/72157623615465277/ .

A video of the Ambassador at the project is available on YouTube at:
http://www.youtube.com/watch?v=vbYxKA6NNss

Activity 1.4 – Establish independent management entity:

At this stage we have not established an independent management entity and this activity probably will not be completed now until close to the end of the project. This is because there is still very little clarity about the best way to proceed here. However, we have made significant progress in understanding the requirements. The need for an independent entity comes from the fact that the project area includes several different forest management zones – national park, forest park, protected forest and two types of production forest, only one of which has clear ownership. If the project area is to be managed and marketed for carbon as a single area, some sort of coordinating body will be required that takes into account the individual (and as yet not fully defined) carbon rights of each forest concession management authority. Options we are aware of so far include a *yayasan* (locally registered not-for-profit group) and a registered company, with each including representatives of each of the forest zones. However, one new option has just come to light following collaboration with the GTZ Merang REDD project. They are using a new and previously untested law that allows for forest management zones to be set up across concessions creating an umbrella management authority called a KPH (*Kawasan Pemankuan Hutan*). However, in Merang the project covers only ex-production forest concessions. Whether a KPH can be applied across concessions ranging in status from national park to production forest is yet to be determined and no precedent exists. One final option is for ZSL, or another non-profit entity, to actually gain control over part of the forest and become an active membership of the partnership with rights to sell carbon, rather than the coordinating body. This would be possible thanks to a recent law that defined 'Restoration Ecosystem' as a new forest concession type, allowing concessions to be used for purposes other than logging. In theory there is still time to allocate the one production forest concession

that has yet to be given to a new concessionaire. Initially it was thought that this option was financially out of our reach, but recently Wetlands International's Global Peatland Fund, in whose portfolio the Berbak Initiative is listed, identified an investor potentially interested in obtaining a restoration ecosystem concession and they are currently investigating the Berbak option.

Activity 1.5-8 – Sign agreements with forest stakeholders:

At this stage agreements have not been signed with each stakeholder. The agreement with Berbak National Park is ready for signing, but requires the umbrella MoU with the Ministry of Forestry before it can be signed, as does any agreement related to the TAHURA concession which also comes under the Ministry of Forestry. Discussions have been held with PT Putra Duta, one of the logging concessions, but they wanted to see some economic analysis before signing any commitments. This is now available through the desktop analysis produced as part of Output 2 and the company will be re-approached in year two. The second concession is still empty, so has no entity with whom agreements can be signed. Finally, local government participation is crucial for incorporating the *hutan lindung*. Various attempts were made to engage with local government throughout the year, but we were competing with projects that discussed huge potential revenues with little practical plan on the ground. Our project which promises major biodiversity benefits but does not promise huge revenue struggled to gain attention. This has now changed with the intervention of the British Embassy (see activity 1.3) and we also now have the economic arguments for persuading local government to sign up and this will be pursued again in year two.

Activity 1.9 – Conduct economic feasibility study

This activity was slated to occur in year 3 but for reasons outlined in the introduction it was moved to year 1 and combined with the baseline analysis for Output 2. The conclusions of the report were that we definitely had an economically viable project in terms of potential emission reductions. The key finding was that, based on demonstrated historical emissions, future emissions under a business as usual scenario were predicted to reach 164 million tonnes over the next thirty years. This estimate was based primarily on projected emissions from peat degradation and large scale forest clearance by the logging concessions. It did *not* include emissions from illegal logging (because small scale logging cannot be picked up on large scale satellite imagery), or from fire (because there are no approved methodologies for projecting fire occurrence) therefore the estimate for emissions is thought to be conservative. Based on assumptions on feasible reductions and on future carbon prices, the economic feasibility section of the report estimates that several hundred million dollars could potentially be generated over thirty years, which would be more than sufficient to provide the financial incentive to protect the forest. However, one caveat is that most of the potential occurs *outside* the national park, where as the assumption would be that the most important areas for biodiversity would be *inside* the park. This is because the key drivers of deforestation in the park are fire and illegal logging, which could not be included in the analysis. Nevertheless, it is strongly recommended that the project continues as a whole, incorporating the national park into the overall project since its inclusion is vital for controlling leakage, for retaining credibility, and for promoting biodiversity benefits which is a key feature in voluntary markets and, following the Copenhagen Accord, is also a stated part of REDD. The final report is available in the online Dropbox folder.

Output 2: Quantification of emission baseline values

Since all activities for this output were covered by the desktop analysis report commissioned from Forest Carbon (and produced with the help of ZSL staff) these activities will be dealt with as one. A copy of the report is available in the Dropbox folder accompanying this report. The report starts by conducting a thorough analysis of historical deforestation, both within the boundaries of the project area and in a reference region of 3.85 million hectares of similar land in the region. Using Landsat imagery from 1990 to 2005 and ALOS imagery up to 2009 the analysis shows deforestation rates of 2% / year across the project area (equivalent to the national average), but with some areas (including the forest park) disappearing at over 4% / year. Based on a subset of the historical data LCM Transition Sub-Modelling was then used to determine the factors that could be used to predict deforestation. The final model was tested for accuracy by using it to predict deforestation from 2005-2009 and comparing it to the actual deforestation observed. The kappa score for the final model was 0.9, meaning that it can

predict deforestation 90% better than chance alone. The model was then used to predict deforestation into the future in a business as usual scenario, and to calculate the likely carbon emissions associated with this. The results showed that over the next ten years, 49 million tonnes of carbon were likely to be released if nothing was done. In the next thirty years, 164 million tonnes were projected to be released.

Output 3: Quantification of co-benefit baseline values

Activity 3.1 – Establish field base

Establishment of a field base was completed during year one. The base is located at Simpang Malaka inside the National Park and is a renovation and expansion of an abandoned guard post. The majority of funding for the base came from a donation from KPMG, but the staff time required to organise the building, which took the best part of a year, was all funded from the Darwin grant. The base is now permanently manned by ZSL and Park staff and has already played host to visiting researchers from CIFOR, the University of Brighton, the University of Aberdeen and IPB Indonesia. Photographs of the base, before and after renovation, are available at:

http://picasaweb.google.com/zslindonesia

Activity 3.2 – Development of biodiversity assessment protocol

A biodiversity assessment protocol is in development in conjunction with another ZSL project in Indonesia. In March 2009 ZSL and LIPI (Indonesian Institute of Sciences) worked together to survey a number of taxa at sites in Sumatra and an MoU was signed to extend the collaboration to Berbak and other sites. Within 2009 the ZSL team focussed on surveys of tigers and large mammals only.

Activity 3.3-4 – Calculation of species richness and habitat use across different forest classes

A supervised classification of forest classes across the project zone was commissioned in November from Forest Carbon and forms part of the final desktop report. Unfortunately, at the time of writing, this is the last component of the report still due to be delivered. Once it is received the camera trapping data gathered to date will be overlaid, although most of the camera trapping to date has only occurred in one forest type. The second phase of the tiger survey (due in the dry season of year 2) will be conducted in a new section of the forest. Nevertheless, camera trapping has been conducted at various locations within the national park to get a picture of the large mammals and some ground birds present. Species of note identified so far, apart from the tiger, include the Malayan sun bear, Malayan tapir, Crestless fireback and False ghavial. The latter is critically endangered and has not been photographed but identified on several occasions from informal canoe surveys.

Activity 3.5 – Tiger density assessment

The tiger density assessment was planned to be conducted across all three years. Due to logistical restrictions of working in a flooded peat swamp, the only periods when extensive field work can be carried out is during the dry season (June-August). In year one this period was used to set 72 camera traps at 36 camera stations. Camera stations were placed around 2.5km apart (min. 1100m, max. 2800m, mean 1737m) meaning the largest ‘hole’ in the camera web was no larger than 8 sq. km. which should be too small an area for a tiger to live, thus ensuring there were no holes in the web where there was 0% chance of detecting a tiger. The cameras were left for two months although failure rates were high due to the high humidity, so obtaining a little under 2000 trap nights. At least four individual tigers were photographed during the survey, but monitoring cameras (left in the same places for longer periods) have since picked up a further 3-5 individuals so we now have 7 firmly identified (4 male, 5 female) and 2 possible further individuals requiring additional photographs to confirm (1 male and 1 female) within a 225 sq.km area. Assuming similar results across the area we would be expecting an overall population of somewhere around fifty individuals within the project area and closer to 100 across the entire ecosystem including the forest in South Sumatra province. Detailed CMR analysis for an overall project area estimate will be conducted when the data set is larger. Photographs and locations of tigers identified to date can be seen at:

http://picasaweb.google.com/zslindonesia

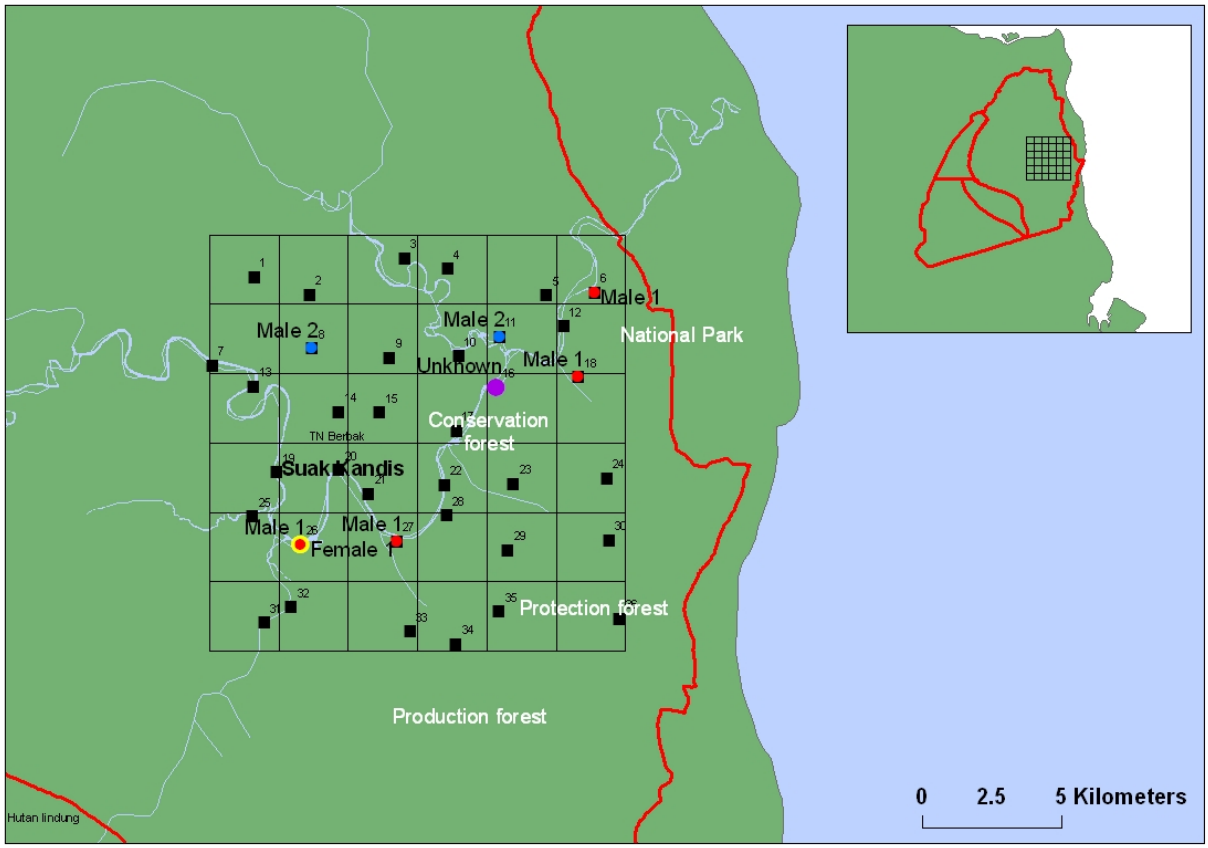


Figure 2 - Map of camera and tiger locations during the density survey

Activity 3.6 – Not planned for year 1

Activity 3.7 – Assess basic social and demographic variables

Social and demographic variables were assessed by Jambi-based NGO WALESTRA working with our own community officer using a combination of government demographic statistics and field visits. Presenting the results both as a website database (yet to go live, but all of the files are included with this report – please open the 'index' file in the web database folder of the community study) and as a written document, they identify 32 villages in the Berbak ecosystem and compile all the official statistics in an easy to reference format. Four of those villages were visited to collect forest-community dependent relationship data. Pematang Raman was identified as the largest village in the area comprising of ± 16.000 hectares while Jebus was the smallest covering ± 1.042 ha. Most people living in all four study villages depended on forests directly or indirectly, primarily through wood and non-forest products. Coconut and rubber plantations were their main source of income. The main issue relating to national forest management was the unclear boundary between the national park and villages. This problem has influenced natural resource management with local communities reluctant to be involved in forest monitoring activities. It was recommended that a more comprehensive approach was needed to facilitate the establishment of a model in forest management consisting of various stakeholders, including local communities, governments and forest agencies.

Activity 3.8 – Conduct needs assessment for communities

At this stage no needs assessments have been conducted. The next step, having defined the Berbak community, is to set a baseline against which we can measure any progress. This will be conducted using methods recommended in the CCBA standard. Following this we will turn attention to assessing community needs and how an REDD project might be able to meet these, so this activity will now be conducted in years 2-3.

Output 4: An assessment of strategies to mitigate environmental change

No activities planned for year 1

3.2 Progress towards Project Outputs

Output 1: Establishment of an institutional framework

With a good proportion of activities contributing to Output 1 complete we are now much closer to establishing the institutional framework in terms of having a picture of how it will develop and what we need to do, with the key limitation still being the lack of clarity at a national or international level. The international situation is now not likely to change greatly between now and the end of the project but the Indonesian situation is still dynamic, with rumours of an additional law about to be released to clarify projects looking to deal on voluntary markets and of USAID assisting with the production of a catch-all law on REDD activities. Becoming more active politically was a key step for us and we are now building a firm foundation throughout all relevant parts of government and most now know of the Berbak Initiative. We have been promised help from a senior member of government to formally register the project as an REDD initiative and will be initiating this process as soon as our MoU is finalised and we have a base from where to negotiate. On the question of the entity under which the project can operate we now know more options but it is still unclear which is the best. We are now working closely with GTZ to discuss this and, following the event at the British Embassy, we have now been introduced to PEACE, an Indonesian non-profit that specialises in the legal aspects of carbon project and we are now discussing a collaboration here.

Output 2: Quantification of emission baseline values

Quantification of emission baseline values is now complete to the minimum ('Tier 1') level required. Certification and investors, however, require more detail, so years 2-3 will be focussing on verifying these data. Field teams will be used to verify the forest classification maps, peat depths and forest density (and thus carbon values) and canal locations and extents (which are unsure based on satellite imagery). We will also be turning attention to the variables that could not be covered in the baseline survey – illegal logging and fire. Illegal logging will be quantified using field surveys. These will follow a successful pilot study conducted in year 1 whereby one member of our team who is an ex bird poacher was able to survey illegal logging teams under the guise of looking for birds. In one area he managed to record location, number of people and chainsaws and even estimates of production by simply sitting with loggers in camps and discussing their activities.

Output 3: Quantification of co-benefit baseline values

For biodiversity we have made a good start but we are looking to expand to additional taxa for years 2-3. To some extent fieldwork has been limited by the need to focus on building the base, with the first tiger survey conducted using a boat as a base because the main field site was still being built. Tiger-focussed camera trapping surveys will be continuing until we have a good understanding of individuals present, other large mammals and also an overall estimate for the population. Besides these we also plan to add crocodile surveys, primarily for false ghavials, to follow up on surveys that were conducted in the late 1990s and early 2002. We are also arranging with LIPI to send experts in new taxa to the field site – currently a fish identification expedition is being planned.

For community values WALESTRA have made a good start defining the 'Berbak community', most of whom do not live within the project boundary. Following on from their baseline work we now need to understand better who the community is, using sampled questionnaire studies to check official statistics and also to look at economic status, reliance on the forest, attitudes towards the environment and other aspects not obtainable from official statistics. At the same time, questionnaires will be designed to gather baseline data to give us a point from which improvement can be measured, which is a requirement of certification. An additional grant has now been obtained from Taronga Zoo in Australia to assist with socialising REDD principles and to start the process of looking at how future revenue could be channelled to local communities.

Output 4: An assessment of strategies to mitigate environmental change

No activities were planned in year one, but thanks to the desktop analysis report we now have a clearer picture on which activities need assessment. The key areas requiring action are recommended to be:

- Controlling peat management, primarily through closing canals and re-wetting peat
- Working with government to improve/introduce protection into conservation forests outside the national park where deforestation is occurring at twice the national average. The patterns of deforestation suggest it is being driven by big business – probably the logging companies straying outside their boundaries – rather than local logging.
- Working with logging companies to change logging plans (although this may contradict with any efforts to increase control over their illegal activities)

Contrary to original assumptions, control of illegal logging is no longer an obvious priority since a) the extent could not be quantified and b) no methodology exists for certifying practices to reduce local community impacts. Fire prevention was also initially considered as a viable activity since 25% of the park was lost to fire in 1990-2000, but again the initial analysis somewhat surprisingly suggests this is not the case. To check this analysis we intend to re-assess the extent of illegal logging impact through field study and also to explore the potential for getting methodologies approved for predicting the impacts of fire.

3.3 Standard Measures

Table 1 Project Standard Output Measures

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	Total to date	Number planned for this reporting period	Total planned from application
Established codes								
2	Number of people to attain Masters	1						Yes
4A	No. undergraduates receiving training	1						No
4B	No. weeks training	4						No
4C	No. postgrads trained	0						Yes
4D	No. weeks trained	0						Yes
5	No. people to receive 1+yrs training	3						Yes
6A	No. people receiving other training	1						Yes
6B	No. weeks	3						Yes
7	Number training materials produced	0						Yes
8	No. weeks spent by UK staff in country	49						Yes
9	No. species action plans	0						Yes
10	No. field guides	0						Yes
11A	No. papers submitted	0						Yes
11B	No. papers published	0						Yes
12A	No. databases	1						Yes
14A	No. conferences organised	0						Yes

14B	No. conferences attended	4						Yes
15A	No. national press releases	1						Yes
15B	No. local press releases	1						Yes
15C	No. national UK press releases	0						Yes
15D	No. local UK press releases	0						Yes
16A	No. newsletters	0						Yes
16C	Newsletter circulation in UK	0						Yes
New -Project specific measures								

Table 2 Publications

Type (eg journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (eg contact address, website)	Cost £
MSc. Thesis	Mark Allen – Deforestation in Berbak National Park, 2009	University of Brighton	University of Brighton / Dr. Tom Maddox (ZSL)	0

3.4 Progress towards the project purpose and outcomes

In the first year the project has taken significant steps to achieving our purpose of creating a financial incentive to protect the forests and biodiversity of Berbak. Exactly what pieces are required to form the jigsaw that is a REDD project are still not entirely clear, but we now have in place several of the key ones including carbon baselines and emission projections and good progress on quantifying biodiversity and community co-benefits. We also have a firm field base at last and the picture of what is needed to form the institutional framework is also becoming clearer. Crucially we have also taken giant strides in establishing the political capital required to establish an REDD project in Indonesia. In terms of achieving the overall outcome of conserving biodiversity in peat swamps, we still believe avoided deforestation mechanisms to be one of the most exciting and viable ways of conserving forests and their constituent biodiversity into the future, particularly in high carbon systems like peat swamps. Having been based on site for a year the rates of loss on the ground are even more worrying than the desktop report describes, with clear deforestation happing on a daily basis and little incentive to stop it. Slowly, as the potential of REDD is becoming clearer, we have been gathering increased support on the ground. The national park in particular has moved from being a willing but fairly quiet partner into a far more dynamic partner and are actively helping on the ground, particularly in terms of political recognition.

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

In the same manner as the project is contributing to our goal of conserving biodiversity in Sumatran peat swamps, we still believe REDD to have the potential for being one of the most significant developments for biodiversity and sustainable conservation since the development of the national park system. Whilst the Copenhagen Accord failed to make the progress on the wider climate change framework hoped, steps were made forward for REDD, in particular clearly recognising the need for biodiversity and social benefits; REDD is not going to be a purely carbon-focussed mechanism that conserves carbon at the expense of biodiversity, it is going to have to benefit both to be eligible. Many of the criticisms of REDD target its implications for communities and sustainable use, but these criticisms are based on assumptions that it is run badly. If a REDD project is run properly it will have to benefit the very communities it relies on to stop emissions, so in principle REDD still represents a system that benefits carbon, biodiversity and communities. The challenge is to demonstrate that the principle can be put into practice.

4. Monitoring, evaluation and lessons

In the first year we have not got going properly with monitoring activities described, beyond establishing the basic infrastructure and training objectives, although we do now have a network of cameras established purely for monitoring changes in trapping rates for large mammals as an indicator of biodiversity changes. Setting baselines for monitoring changes in communities is a priority for the beginning of year 2.

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

NA

6. Other comments on progress not covered elsewhere

The main achievements that lie outside the core objectives are the political progress achieved by Dr. Suratno, the final, high profile event at the Embassy that formally launched the results of the desktop analysis and our attendance and presentation at the Copenhagen COP meeting, but all of these factors have been covered to some degree in other sections.

7. Sustainability

One of the main attractions of REDD is a concept is that, if successful, it should be self-sustaining. Protecting forest will generate revenue. Failing to protect forest will stop the revenue source. The main question for the Berbak Initiative will be who will continue it once the Darwin funds end and credit generation starts. This largely depends on the final model used to coordinate management, but we are laying good groundwork for the project to continue in that all members of staff bar one are Indonesian and we are closely involving local forest managers, in particular National Park staff, who are strongly interested in taking on a management role.

8. Dissemination

The project has been covered extensively since its inception. A range of media articles have been gathered in the 'Media' Dropbox folder. These cover aspects ranging from the tiger conflicts (which flared up again in December) to the Ambassador's visit to the wider implications of REDD. We have also been featured in an Indonesian TVRI documentary which is also included in the Dropbox files. The project is also the focus of a National Geographic documentary that is nearing completion which focuses on the tiger conflicts that occurred in the area shortly before the project formally started, but in particular focuses on our project as a potential solution. The programme is due to be submitted by the film makers to National Geographic in April, although we have not been informed of a broadcast date. The short film about Berbak used in the British Embassy event featured footage from the longer documentary. The project was also presented at the Copenhagen UNFCCC Conference of the Parties at the CIFOR Forests Day to which Dr. Tom Maddox and Dr. Agus Suratno attended together with the consultant from Forest Carbon, all as part of ZSL's formal delegation.

9. Project Expenditure

Table 3 Project expenditure during the reporting period (Defra Financial Year 1 April 2008 to 31 March 2009)

Item	**Budget** (please indicate which document you refer to if other than your project application or annual grant offer letter)	**Expenditure**	**Variance**
Rent, rates, heating, overheads etc			
Office costs (eg postage, telephone, stationery)			
Travel and subsistence			
Printing			
Capital costs			
Capital items/equipment (specify)			
Others (specify)			
Salaries (specify by individual)			
TOTAL			

The categories given here do not quite match the main category headings in the original budget table. Office costs and printing were grouped into general office costs/overheads within Indonesia and the conferences line was part of a larger category labelled Operating costs. I have made slight adjustments in the Item column to reflect this and to save having to re-classify all our expenses. A full summary is given in the accompanying DropBox file as well as a full breakdown of every single expense.

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

During its first year the ZSL Berbak Carbon Initiative has taken great strides towards its goal of establishing a financial incentive to conserve the forests and tigers of the Berbak ecosystem in eastern Sumatra by building the first REDD project in Indonesia focussed on biodiversity benefits.

Firstly the project now has an established field base at Simpang Malaka within Berbak National Park together with a barge and a small speedboat for getting to and around the site – essential for operating in the extreme conditions of swamp forest. A team of six is based in the field, together with park rangers, coordinated by a Field Manager based in Jambi City.

Secondly, once the base was ready the field team have been getting stuck into quantifying the extent of biodiversity we hope the project will conserve. Focussing initially on Sumatran tigers camera trapping webs have been set, with some cameras requiring two days travel from the field base to check. Results are still coming in but already 67 photographs have been obtained and seven individual tigers are known in the 225 sq. km surrounding the field base, with one female regularly passing the base itself. A second critically endangered species, the False Ghavial, has also been recorded passing the base.

Thirdly, Project Manager Dr. Agus Suratno has worked tirelessly to negotiate the convoluted politics required for establishing an REDD project in Indonesia, a feat culminated by a personal endorsement by the new Minister of Forestry and by the Governor of Jambi in March 2010.

Fourthly, ZSL has been working closely with local NGOs WALESTRA and Gita Buana to understand and involve the local community of Berbak. Following initial socialisation work describing the concept of REDD, demographic research was initiated to measure the extent of people relying on the Berbak ecosystem. A database is now ready to be launched online describing the 32 villages surrounding the area and the project is now poised to move into its second phase identifying how any revenue gained from REDD can be channelled into local communities.

Year one of the Berbak Initative was crowned at the end of March with a fantastic boost for the project when British Ambassador to Indonesia, Martin Hatfull, visited the project and our humble field base and its many mosquitoes for what he later described as ‘the most uncomfortable nights I have experienced in my post’. Nevertheless, he later praised the beauty of the Berbak Ecosystem and the importance of the efforts to conserve it in a reception in Jakarta that the British Embassy hosted to promote our work. Attended by about fifty of the most senior representatives in government and industry concerning carbon, forests and biodiversity the event showcased a specially produced film on Berbak by National Geographic film makers and launched the results of a specially commissioned report by Forest Carbon which revealed that at least 164 million tonnes of carbon were likely to be emitted from Berbak over the next thirty years unless action was taken to address it.