



Darwin Initiative Annual Report



nt note:

To be completed with reference to the Reporting Guidance Notes for Project Leaders – it is expected that this report will be about 10 pages in length, excluding annexes

Submission deadline 30 April 2009

Darwin Project Information

Project Ref Number	16-010
Project Title	Wildlife Wood Project
Country(ies)	Ghana / Cameroon
UK Contract Holder Institution	Zoological Society of London
Host country Partner Institution(s)	Timbmet (in UK – see below for host country institutions)
Other Partner Institution(s)	<u>Ghana</u> : timber companies John Bitar & Co. Ltd (JCM), Samartex Timber and Plywood Co. Ltd (SAX), and Logs & Lumber Ltd (LLL), Resource Management Support Centre of Forestry Commission, Bio-monitoring Unit of Wildlife Division, University of Ghana (Legon), Kwame Nkrumah University of Science and Technology <u>Cameroon</u> : SFID and Pallisco timber companies, MINFOF, University of Yaoundé I, CRESA, CIFOR and potentially ECOFAC
Darwin Grant Value	£265,407
Start/End dates of Project	April 2007 / March 2010
Reporting period (1 Apr 200x to 31 Mar 200y) and annual report number (1,2,3..)	1 Apr 2008 to 31 Mar 2009 Annual report number 2
Project Leader Name	Dr Noelle Kumpel
Project website	www.zsl.org/wildlifewoodproject
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1. Project Background

Protected areas are fundamental to forest conservation but, because protected areas cover only a small proportion of the globe and are often too small and fragmented to support wide-ranging and rare species, managing wildlife outside of them is also critical. Only around 50% of original forest cover remains in Africa today and half of this is allocated to timber exploitation. In recent years there has also been an enormous increase in hunting for the bushmeat trade, often exacerbated by logging activities which open access to new forest areas and bring in timber workers and commercial hunters who hunt animals for food and trade. This is detrimental to both conservation and local people, whose livelihoods may depend on hunting. ZSL, funded by Timbmet and the UK government's Darwin Initiative, has

established the Wildlife Wood Project (WWP) to help logging companies in West and Central Africa adopt low-impact logging practices and apply innovative, practical and cost-effective measures for managing wildlife in their concessions, thereby helping to provide a sustainable future for both wildlife and people.

By increasing access to markets or providing market premiums, timber certification provides a strong economic incentive for timber companies to engage in more sustainable practices. However, the interests of wildlife are currently poorly integrated into certification standards and wildlife indicators have yet to be developed for most standards. The WWP aims to address this shortcoming of the certification process by identifying simple, cost-effective but scientifically-rigorous wildlife indicators that can be used to audit timber companies' management of wildlife in their concessions. With agreed wildlife indicators, certification bodies will be better able to determine whether sufficient efforts are being made by a given company to maintain wildlife status in its concession.

In West and Central Africa, logging activities accelerate unsustainable hunting of wildlife for the bushmeat trade. By assessing wildlife off-take around timber concessions, the WWP is able to gain insights into local bushmeat economies and the impacts of hunting on wildlife, and develop interventions to control hunting while minimising impacts on local people who may have few alternative sources of food or income. The WWP is also training logging staff, government officials, local communities and university students in wildlife monitoring techniques so that future generations of timber concession stakeholders will be able to continue efforts to conserve wildlife whilst achieving development goals.

In Ghana, where approximately 80% of native forest has been destroyed and 80% of remaining forest lies in timber concessions designated as Forest Reserves (FRs), the WWP has been investigating the use of a variety of wildlife taxa as indicators of hunting, logging damage and/or post-harvest forest regeneration. To this end, former Project Manager Paul Buzzard established study sites in moist semi-deciduous forest in Suhuma Forest Reserve managed by logging company John Bitar & Co. Ltd in to compare unlogged forest compartments with those logged 2, 10, and 20+ years post-harvest, and conducted repeated mammal surveys at each site until May 2008. University of Ghana (Legon) MPhil student Nathaniel Annorbah conducted Distance sampling of birds at these sites from April to November 2008, and is currently analysing and interpreting the data in order to complete his thesis and degree by June 2009. Current Project Manager Nico Dauphiné conducted mist net sampling of understory birds at these sites from September to November 2008, with follow-up sampling in replicated sites in Suhuma and neighbouring Sui River Forest Reserve planned for September to December 2009. Kwame Nkrumah University of Science and Technology (KNUST) MSc student Adum Gilbert commenced data collection on amphibians at Suhuma FR sites in March 2009, with continued research planned until August 2009. University College London PhD student Björn Schulte-Herbrüggen conducted 500 repeated socio-economic interviews on rural livelihoods and bushmeat hunting and consumption in Sui River FR, with continued data collection planned until May 2009.

In Cameroon, the project (WWP-Cam) has set up bio-monitoring programmes in two active timber concessions, or Forest Management Units (FMUs), allocated to two timber companies: SFID (Rougier Group) (FMU 10.038) and Pallisco (FMU 10.030). The figure below shows the location of the bio-monitoring transect network in each of these concessions. Ecological and socio-economic research is carried out in and around these concessions in order to gather the basic scientific information necessary to guide wildlife conservation efforts and management actions in Cameroonian permanent and non-permanent national forests.

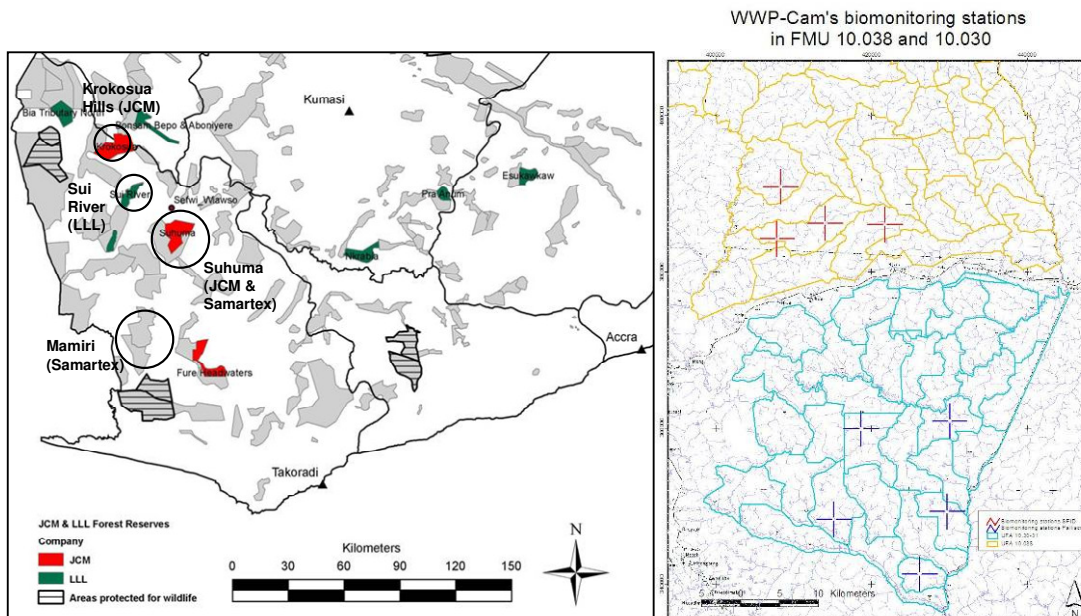


Figure 1. Forest reserves where WWP-Ghana is active Figure 2. Detail of WWP-Cam project sites

2. Project Partnerships

Project partnerships:

In the past year, the WWP in Ghana (WWP-Ghana) has renewed its Memorandum of Understanding (MoU) with John Bitar & Co., Ltd (JCM) and formalised a new MoU with Samartex Timber and Plywood Ltd (SAX); both companies are major timber exporters in Ghana with a stated interest in sustainable logging and timber certification. MoUs with both companies now extend to the conclusion of the project on 31st March 2010. Research collaboration also continues between the WWP in Ghana and timber company Logs & Lumber Ltd (LLL). WWP-Ghana personnel are conducting ongoing research on the distribution and abundance of birds, mammals and amphibians in Forest Reserves in Ghana managed by these three logging companies in order to assess the impacts of logging on these taxa. In addition, WWP-Ghana personnel are collecting data on forest vegetation structure and composition for all study sites in order to assess whether specific measures of forest structure or composition change may be correlated with impacts to wildlife, and for selected study sites in Suhuma FR have collected data on skid tracks, hauling roads and logs/stumps in order to calculate a “logging index” of forest structure damage in logged compartments. Preliminary data to date have been provided to logging company partners and presented at international meetings (see details below).

As part of its agreement with the WWP in Ghana, SAX has identified a “wildlife team” made up of members of its enumeration teams who have shown interest in and/or aptitude for wildlife research; in addition, SAX has expressed particular interest in verifying the existence of chimpanzees (*Pan troglodytes*) in their concessions in Mamiri FR, and a further interest in taking special conservation measures should evidence of chimpanzees or other vulnerable wildlife be found. The WWP has contracted Sylvain Gatti of West African Primate Research Action (WAPCA) to conduct mammal surveys in collaboration with the WWP Ghana Project Manager and train SAX’s wildlife team in mammal identification and survey techniques starting in May 2009.

Further data and capacity building will be provided through a WWP contract with University of Ghana lecturer Lars Holbech, a wildlife expert with nearly two decades’ experience conducting research in Ghana’s forest reserves, who has agreed to lead a WWP team conducting rapid assessments of designated “critical wildlife,” or wildlife targeted by hunters that appear to have undergone declines but for which little quantitative data has been

published on long-term population trends, including hornbills (Aves: Bucerotidae), gamebirds (Aves: Numididae and Phasianidae), raptors (Aves: Accipitridae), non-human primates (Mammalia: Hominidae) and other at-risk mammals and birds. Field surveys for rapid assessment of critical wildlife are planned for April, May and December 2009, and will include training for team members on identification and survey techniques for target wildlife species.

The WWP in Ghana has maintained its partnership with the Resource Management Support Centre of Forestry Commission through periodic exchanges of information; most recently Forestry Commission officer Charles Sah provided the WWP government records on logging history and intensity in Suhuma and Sui River FRs. The WWP maintains its partnership with the Bio-monitoring Unit of the Wildlife Division via periodic collaborative field research; most recently two Wildlife Division officers, James Oppong and Seth Opoku-Mensah, accompanied the Project Manager on fieldwork in Suhuma FR and received training and experience in mist-netting birds. Finally, the WWP has ongoing partnerships with University of Ghana (Legon) and KNUST, through which it has supported fieldwork for Ghanaian MSc students (mentioned above) studying the impacts of logging on wildlife.

The WWP-Ghana keeps in touch with its partners through regular contact by phone, email, and in-person meetings. Presentations on bird-focused research to date in JCM concessions were provided to JCM directors. Findings are distributed to partners in periodic newsletters via email. In addition, project affiliates have made presentations of preliminary results of the WWP in Ghana at two international scientific meetings: the Society for Conservation Biology (SCB) first Africa Section meeting in Accra, Ghana (28-30 January 2009), and the Student Conference for Conservation Science (SCCS) in Cambridge, UK (24-26 March 2009). Presentations made were entitled, "Using birds as indicators for wildlife conservation in Upper Guinea Forests of Ghana," "Cocoa farming and bushmeat hunting in a forest-farm mosaic in southwest Ghana," both at the SCB meeting, and "Implications of selective logging for birds in a moist semi-deciduous forest of Ghana" at the SCCS meeting.

In Cameroon, a major achievement of this reporting period has been the signing of MoUs between WWP-Cam and two timber companies: SFID (Rougier Group) and Pallisco. SFID and Pallisco are both committed to responsibly managing their forest concessions and are engaged in the advanced certification process. In October 2008 Pallisco achieved FSC certification for all of its concessions (6 FMUs and one sawmill). As part of their involvement with WWP-Cam, both of WWP-Cam's timber company partners have recruited technical staff ("wildlife teams") to conduct bio-monitoring surveys and monitor the occurrence of illegal hunting activities in their respective concessions. SFID initially created two wildlife teams (one for each sawmill site: Mbang and Djoum) but one has had to be disbanded as a consequence of the global financial crisis which has limited the company's activities to the Djoum sawmill site. WWP-Cam oversees both companies' wildlife teams and provides the teams with regular training in field data collection and analysis and the use of relevant electronic devices (GPS, CyberTracker, etc.). The ultimate aim is to build in-house capacity to facilitate the independent implementation of bio-monitoring programmes. WWP-Cam also trains the wildlife teams in the patrolling of timber concessions, the collection of evidence of illegal activities, and the reporting of these field surveys. Both wildlife teams have produced good results to date and have demonstrated a good level of progress.

At the institutional level, WWP-Cam works closely with the Ministry of Forestry and Wildlife (MINFOF). The establishment of a formal MoU had been delayed by multiple changes in personnel at MINFOF, but a draft MoU was submitted to MINFOF in December 2008 through its *Département de la Coopération Internationale et de la Programmation*. This draft will be examined by a MINFOF committee imminently. The purpose of this partnership is to contribute to the reinforcement of national expertise in bio-monitoring and assure co-operation and information sharing between WWP-Cam and MINFOF. Under the framework of the drafted MoU, WWP-Cam will train ecoguards in wildlife monitoring techniques, the analysis of survey data, the basics of cartography, and scientific reporting whilst the results of WWP-Cam research work will contribute to national discussion regarding wildlife monitoring/management methods in logging concessions.

WWP-Cam also regularly works with CIFOR (Centre for International Forestry Research). Scientific partnership agreements for specific studies are currently being formalised but presently CIFOR has agreed to assist WWP-Cam in conducting socio-economic surveys of local communities. WWP-Cam's current bio-monitoring stations flank the Zoulabot-Medoum road axis and a thorough knowledge of the local populations' hunting activities along this road is essential in order to propose some realistic and efficient wildlife management measures to our corporate partners. Julius Tieguhong, an independent consultant and former CIFOR collaborator, is leading a socio-economic study on the dependency of 6 local villages neighbouring SFID and Pallisco's concessions on forest products and bushmeat consumption. A report of this study will be provided in May 2009.

To contribute to national capacity building, in April-May 2008 WWP-Cam also signed MoUs with two Cameroonian academic institutions: the Department of Biology and Plant Physiology of the University of Yaoundé I (UYI) and the University of Dshang's *Centre Régional d'Enseignement Spécialisé en Agriculture* (CRESA). WWP-Cam currently supervises the fieldwork of two MSc students from UYI; Parfait Devis Biloa is investigating the effect of linear transect network design on wildlife survey results whilst Mapon Rikiatou is conducting a socio-economic study of the dependence of a rural village in the periphery of SFID and Pallisco's concessions on forest resources. Both students plan to present their work during the 2008-09 academic year. The supervision of an additional two CRESA MSc students is planned for the last year of the project (starting in July 2009).

WWP-Cam disseminates a monthly newsletter, detailing the project's recent activities, to all of its partners. The newsletter enables collaborators to remain aware of progress towards the project's objectives whilst also facilitating the development of a network of experts to debate wildlife management issues. The newsletter has been very well received.

Other Collaboration:

WWP-Cam has been in discussion with ECOFAC (*Ecosystèmes Forestiers d'Afrique Central*; an EU-funded project operating in seven central African countries) in Cameroon about collaboration in the Dja Reserve where ECOFAC assist MINFOF in the implementation of the reserve's management plan. Bureaucratic delays and administrative issues on the side of ECOFAC have delayed WWP-Cam's intention to conduct bio-monitoring surveys in the Dja Reserve but it is hoped these matters will be resolved imminently.

3. Project progress

3.1 Progress in carrying out project activities

1.1 Field surveys in forest areas with varying hunting and logging impact

In order to conduct field surveys in forest areas with varying hunting and logging impact in Ghana, former WWP Ghana Project Manager Paul Buzzard used data from logging companies JCM and LLL and the Forestry Commission to establish a replicated study design that included the following treatments in moist semi-deciduous forest: unlogged forest (UL), recently logged forest (1-3 years post-harvest) (L2), forest approximately 10 years post-harvest (L10), and forest 20 or more years post-harvest (L20), and located treatment replications in Suhuma, Sui River, and Krokosua Forest Reserves managed by JCM and LLL, providing a nearly complete replicated study design for moist semi-deciduous forest. He conducted repeated mammal surveys at each study site identified, completing most of the fieldwork before the end of the previous annual reporting period. During the current reporting period, University of Ghana MPhil student Nathaniel Annorbah used sites in Suhuma FR for a study of bird community responses to logging using Distance sampling largely by sound over the 6-month period between April and November 2008, using a total sample effort of c. 240 field hours on 96 km of transects to make a total of more than 7000 detections of c. 40

understory bird species; he is currently analysing this data to examine bird community responses to logging history.

Current WWP-Ghana Project Manager Nico Dauphiné has used the sites in Suhuma FR for mist net sampling of understory birds, a taxonomic group known to be good indicators of logging damage and forest regeneration, and trained a WWP Ghana “bird team” in mist net operating and bird handling protocols. To date they have completed c. 8280 net-metre-hours of bird sampling in moist semi-deciduous forest in Suhuma FR, capturing and releasing 114 individual birds of 27 species during the sampling period. The completion of field research in moist semi-deciduous forest is scheduled to take place from September to December 2009, the end of the rainy season, in order to minimise seasonal effects in data collection. Meanwhile, field research in moist evergreen forest is currently underway, using the same study design. The bird team has begun identifying field sites in the same logging treatments in Yoyo and Boin River FRs, and has thus far completed c. 8280 net-meter-hours of mist netting, capturing and releasing 116 individual birds of 15 species during this sampling period. Further field site identification and sampling is ongoing in moist evergreen forest and planned through August 2009. Amphibian sampling has begun in Suhuma FR at established study sites and is ongoing.

It has not been possible to identify forest areas with differing hunting impact a priori due to the lack of previous quantitative study of comparative hunting impacts in Ghana’s Forest Reserves, although it is qualitatively known from this and previous research that hunting pressure in Ghana, even in official protected areas, appears to be fairly uniformly high. WWP researchers in Ghana have been assessing hunting at research locations by quantifying and comparing evidence of snare traps and gun hunting through counting rifle cartridges and gun shots in the course of conducting fieldwork. Results of this data collection and analysis will allow a post hoc comparison of forest areas with differing hunting pressure if such differences are identified.

Following the signing of MoUs with SFID and Pallisco, two neighbouring concessions allocated to these companies in the East Province of Cameroon were selected to implement two parallel bio-monitoring programmes. The research sites differ in the level of hunting pressure with SFID’s sampling stations being located closer to villages than Pallisco’s. Every 5-6 weeks since October 2008, SFID’s and Pallisco’s wildlife teams have carried out diurnal and nocturnal mammal surveys on a 32km and 40km network of linear transects respectively. To date there have been 6 data collection events and at least another 6 are planned. At both sites, the implemented bio-monitoring programmes have followed a Before-After-Control-Impact (BACI) design so as to facilitate evaluation of the impact of hunting and logging on mammals.

1.2 Hunter, household- and market surveys to assess off-take and local trade impact

Between July and December 2008, ZSL Institute of Zoology and University College London PhD student and WWP-Ghana affiliate Björn Schulte-Herbrüggen conducted 500 repeat socio-economic interviews on rural livelihoods and bushmeat hunting with 65 cocoa farming households in a rural community in Sui River FR. Respondents were asked to report all monetary and non-monetary income over a 24-hour period. Preliminary results indicate that most hunting takes place through snare traps and/or with dogs, with a minority of animals being shot, and that the low numbers of large mammals preferred by hunters reflects their depletion in the Forest Reserve. Preliminary results also indicate that the poorest quarter of households were more reliant on bushmeat than their wealthier counterparts, and that likewise, income diversification appears to be negatively correlated with reliance on bushmeat. Further data collection, analysis, and interpretation is expected from May 2009 during the final year of the project.

For WWP-Cam, in February 2009, a socio-economic study of 6 rural villages along the Zoulabot-Medoum road axis (East Province) that neighbours both SFID’s and Pallisco’s

concessions was conducted. A questionnaire on bushmeat consumption, with a focus on the origin and destination of bushmeat products, was designed and used to interview about 60 hunters. The respondents were asked to report all bushmeat items that they collected from the forest, their origin (in/out of a logging concession) and the quantities which they sell and/or consume at the household level. Basic socio-economic information (gender, age, etc.) supplemented this data. A more detailed inventory of forest products harvested in timber concessions is currently being compiled in one of the villages by a UYI student as part of her MSc thesis work. Detailed knowledge of the level and spatial distribution of human activities in this area is essential to assess the population's dependency on forest resources, and human pressure on wildlife, originating from SFID's and Pallisco's timber concessions. Only with this knowledge can wildlife conservation actions that take account of local population needs be developed with WWP-Cam's corporate partners.

2.1 Review forest management plans in case study forests and develop wildlife management actions with the timber companies and local communities

The WWP in Ghana is currently actively conducting research in Suhuma, Yoyo and Boin River FRs in concessions managed by both JCM and SAX. Research is planned from April 2009 in Mamiri, Sui River and other Forest Reserves managed by JCM, SAX and LLL, with comparisons with unlogged (but hunted) control sites in protected areas in Bia (moist semi-deciduous forest) and Ankasa (moist evergreen forest). Wildlife research and discussions of management plans and actions with timber companies and local communities are ongoing. At the conclusion of data collection, analysis, and interpretation, the WWP Ghana will be able to offer and disseminate results and recommendations of research in the form of reports and workshops with project partners.

Biological and socio-economic surveys carried out by WWP-Cam are ongoing. Further data collection is required before robust management actions can be proposed. In addition to their survey work, however, wildlife teams have also monitored the occurrence of illegal activities in timber concessions; the teams collect information on potential illegal activity and then patrol timber concessions in search for evidence. The reports produced by these teams, twelve to date, are very useful in guiding the conservation efforts of timber companies and are often the catalysts of legal action being taken.

2.2 Cost-effective forest monitoring

The WWP in Ghana has employed and continues to employ a number of methods to survey wildlife in timber production forests in Ghana, including: linear and "recce" transects for mammals, linear transects and mist net sampling for birds, and occupancy sampling for amphibians. Additional surveys and monitoring using camera traps are planned to start in May 2009. Results and analysis from each of these methods will allow the WWP in Ghana to recommend cost-effective methods to monitor a variety of wildlife taxa in logging concessions during the final year of the project.

WWP-Cam is now conducting additional wildlife surveys using different methodologies in order to determine the most cost-effective and scientifically rigorous bio-monitoring protocols. In a logging compartment in SFID's FMU 10.038, WWP-Cam has begun to test the efficacy of camera traps in estimating the relative abundance of large- to medium-sized mammals and their spatial distribution. Furthermore, in collaboration with a CIFOR/CIRAD project WWP-Cam is comparing two sampling methods commonly used for mammal surveys in tropical rainforests: a network of linear transect vs. "recces".

3.1 Capacity-building through training

The WWP in Ghana hosts one MPhil and one MSc student, from UG-Legon and KNUST, respectively. MPhil student Nathaniel Annorbah has completed field research on effects of

logging on bird communities in moist semi-deciduous forest and is in the process of data entry, analysis and interpretation; MSc student Adum Gilbert has initiated field research on effects of logging on amphibian communities in moist semi-deciduous forest and his research is ongoing. The WWP in Ghana has provided these students with references and advice on study design, data collection and data analysis using Distance and occupancy sampling, respectively. Wildlife Division officers and a number of local community members have been trained in bird identification and sampling techniques as well as habitat structure and vegetation survey methods techniques. Further training in mammal and other wildlife identification and survey techniques for logging company staff is planned from April to December 2009.

WWP-Cam currently supervises two MSc students from UYI. One student's work focuses on the effect of linear transect network design on wildlife survey results whilst the other's deals with the dependence of a rural village on forest resources, and specifically bushmeat. Students at WWP-Cam are trained in field data collection and analysis, the use of specific software packages and scientific reporting. Timber company surveyors regularly join the same training sessions.

At the end of January and early February, two exchange visits were organised between the WWP's research sites in Ghana and Cameroon. These visits allowed the project managers to discuss their respective experience of implementing WWP's planned activities in the field.

3.2. Awareness raising of wildlife management in timber production forests

An information leaflet summarising the WWP (available at: www.zsl.org/wildlifewoodproject) was printed and distributed to all major collaborators. The WWP in Ghana has distributed and discussed this information with logging company partners, the Regional Director of the Forest Stewardship Council, Demel Teketai, and participants at the SCB Africa Meeting in January 2009. Through participation in several workshops aiming at reviewing/developing certification standards, WWP-Cam promoted the need to integrate wildlife indicators in timber certification schemes.

3.2 Progress towards Project Outputs

1. Wildlife indicators identified and dynamics of bushmeat trade documented in 2 rainforest regions (west and central Africa), which can be used to verify timber certification systems

Previous work by former WWP-Ghana Project Manager Paul Buzzard and future work by WWP consultant Sylvain Gatti will contribute to informing selection of mammal indicator species and survey methods for ongoing monitoring programs following the conclusion of the project. Ongoing work led by current WWP-Ghana Project Manager Nico Dauphiné and MPhil student Nathaniel Annorbah will contribute to informing selection of bird indicator species and survey methods for ongoing monitoring programs following the conclusion of the project, and likewise ongoing work by Gilbert Base will contribute to informing selection of amphibian indicators and survey methods. Ongoing work by PhD student Björn Schulte-Herbrüggen and future work by WWP consultants Sylain Gatti and Lars Holbech in collaboration with the WWP-Ghana Project Manager will contribute to identifying dynamics of the bushmeat trade which can be used to verify timber certification systems in West Africa. Findings will be disseminated in technical reports and peer-reviewed papers in the coming year as planned.

For WWP-Cam, technical reports and peer-reviewed papers will be compiled during Year 3 based on biological survey data from the two ongoing bio-monitoring programmes in the timber concessions of the project's corporate partners. To date, about half of the surveys needed to complete a one-year time series of the distribution and abundance of mammal species in an active logging concession have been completed. A follow-up of earlier research into bushmeat off-take and consumption in local villages commenced in Year 2 and will be pursued in Year 3 through at least two MSc theses.

2. Wildlife management plans developed and impacts monitored through cost-effective and scientifically rigorous wildlife monitoring systems in 2 case study forests (1 per country), to ensure best practice and monitor impacts

The WWP in Ghana continues to conduct research towards assessing impacts of logging on wildlife in order to advise wildlife management plans in logging concessions. Suhuma FR serves as the main case study forest for wildlife research, where data on mammals, birds, amphibians continue to be collected in addition to data on hunting pressure, vegetation structure and composition and logging damage that will allow a quantitative assessment of logging impacts on study taxa. Mamiri FR will be the site of additional mammal surveys, including camera trapping, and data on wildlife and logging damage in Yoyo, Boin River, Sui River and other Forest Reserves will complement data from Suhuma in order to recommend best practices and monitor logging impacts.

In accordance with the MoU signed with WWP-Cam, SFID and Pallisco recruited staff to create wildlife teams to monitor wildlife and illegal activities in their concessions. WWP-Cam supervises the work of these teams and trains their staff members. The team is responsible for conducting bio-monitoring surveys and patrolling timber concessions in search of illegal activities such as poaching, illegal sawing and unauthorised settlement. Through their field reports, the wildlife teams are contributing to the improvement of current concession management plans and guiding wildlife conservation efforts.

WWP-Cam's bio-monitoring programme itself has been designed to assess the impact of the introduction of logging activities on mammal abundances in logged forests (BACI design) and to estimate the overall level of hunting pressure in timber concessions. For this programme, surveys occur on a network of linear transects. "Recce" transects and camera trapping methodologies are being tested as well. Results from surveys employing these alternative techniques will help us to propose an easy, cost-effective and efficient wildlife monitoring protocol to our timber company partners. Technical reports and peer-reviewed papers will be produced at the end of Year 3.

3. Capacity building and awareness of timber certification and wildlife management increased among government, private sector, research and local communities, and timber consumers

Capacity for wildlife identification and surveying has been built and continues to be built among Wildlife Division officers, local community members, and logging company, university and NGO personnel in Ghana, and two MPhil/MSc students will complete their studies alongside WWP-Ghana in Year 3. Timber certification and the need for wildlife management integration therein has likewise been discussed with all of these partners and parties. Further research and discussion will contribute to the design and implementation of a workshop among partners and other interested parties in Ghana at the conclusion of the WWP, in order to recommend long-term changes in management practices based on our collective findings.

Following the signing of MoUs with two Cameroonian academic institutions in the last reporting period, the University of Yaoundé I and the University of Dshang's *Centre Régional d'Enseignement Spécialisé en Agriculture* (CRESA), two MSc students from UYI, who will complete in Year 3, are being supervised and trained by WWP-Cam. Two additional CRESA students will commence similar training and supervision for their thesis projects in July 2009 (Year 3). In Year 3, press and radio coverage will be sought to promote the achievements of WWP-Cam. A road-show will be organised in the villages surrounding SFID and Pallisco's concessions to familiarise local populations with issues of wildlife conservation and management. In 2010, WWP-Cam will organise a national workshop synthesising results and recommendations from all research work carried out in the course of the project, with a focus on how this can feed in to certification standards and individual timber company management plans.

The final results and recommendations of the WWP overall will be published in a report and presented at an event in London in March 2010, to which relevant stakeholders such as UK, EU and African government representatives, the timber industry, consumer groups, certification bodies, conservation and development NGOs and other interested parties will be invited, alongside the general public. This will be publicised in the UK and international media with the help the press offices of ZSL and hopefully the Darwin Initiative.

3.3 Standard Measures

Table 1 Project Standard Output Measures

Code No.	Description	Yr 1 Total	Yr 2 Total	Yr 3 Total	Yr 4 Total	Total to date	Number planned for this reporting period	Total planned from application
Established codes								
2	8 MSc students from University of Ghana, Legon and University of Dschang, Cameroun (2 range-state students per year for Yrs 1 & 2 per country). Training will be in the field by MSc and PhD-level ZSL field managers.	0	4	4	/	0 graduates (2 Ghana ongoing, to graduate yr 3; 2 Cameroon ongoing, to graduate yr 3 and 2 to start in yr 3)	4	8
5	4 timber company surveyors will be trained on-the-job over Yr 1, to carry out wildlife surveys (use of GPS, standard field sheets, report writing) (2 in each country)	4	0	0	/	12 (2 trained yr 1, 5 to be trained yr 3 in Ghana; 10 trained continuously in yrs 2 and 3 in Cameroon)	0	4
5	6 government rangers will be trained on-the-job over Yr 1, to carry out wildlife surveys (use of GPS, standard field sheets, report writing) (3 in each country)	6	0	0	/	5 (Ghana only so far; 6 to be trained yr 3 Cameroon)	0	6

6A	6 community project assistants will receive training in socio-economic surveys, and in assisting with the forest surveys (3 in each country)	6	0	0	/	6 (Ghana only; 2 to be trained yr 3 in Cameroon)	0	6
6B	Training of community assistants over a 4 week period (3 in each country)	6	0	0	/	4 (Ghana only; ongoing training of community assistants integrated into wildlife teams)	0	6
6A	2 exchange visits by senior project staff, to share lessons learned and appreciate the difference between different sites/regions. One week visit, to one case study forest management unit in Ghana and in Cameroon.	0	2	0	/	2	2	2
8	280 weeks over the 3-year project period: three weeks per year from the project leaders; 70+ weeks for PhD student studying socio-economics of bushmeat in Ghana; 100 weeks for the ZSL project manager in each country.	93	93	93	/	212 weeks (70 wks PhD student; 65 wks each for 2 x in-country project managers and 6 wks each for UK project leaders)	93	270+
9	Two wildlife management action plans, to be integrated into forest management plans for each of the case study forest management units (one in Ghana, one in	2	0	0	/	0 (to be done yr 3 at end of project)	0	2

	Cameroon).							
10	One report on best practice guidelines for wildlife management in timber production forests in West and central Africa.	0	0	1	/	0	0	1
10	Two ZSL Conservation Reports on wildlife indicators that can be used in timber certification for i) west and ii) central Africa.	0	0	2	/	0	0	2
11B	Two papers submitted to peer-reviewed journals: on socio-economics of the bushmeat trade in Ghana; on wildlife indicators and timber certification in Africa.	0	0	2	/	0	0	2
12B	Two databases will be enhanced with wildlife information; the RMSC database in Kumasi, Ghana and the WWF-Cameroon database in Yaoundé, Cameroon	0	0	2	/	0	0	2
14A	Two national workshops will be organised to present the results of this study in each country, and invite feedback from stakeholders in the country/region.	0	0	2	/	0	0	2
14A	International workshop to disseminate results to the international timber trade.	0	0	1	/	0	0	1

15A	6 national press releases (one / year / country)	2	2	2	/	0	2	6
15C	UK press release to show DI support for Wildlife Wood Project	1	0	0	/	0 (UK event and press release planned for yr 3 instead)	0	1
16A	2 information Sheets (one for Cameroon / one for Ghana)	2	0	0	/	1 (for both countries combined instead)	0	2
19A	6 national radio features (one / year / country)	2	2	2	/	0 (2+ planned in Year 3 in Cameroon and Ghana)	2	6
20	Equipment valued at £30,000 at date of purchase will be handed over to government or local NGOs.	0	0	£30,000	/	0	0	£30,000
22	Two (plus) permanent field transects will be established (one in each case study forest management unit)	4+	0	0	/	3 (30km in Suhuma in Ghana and more planned for yr 2; permanent bio-monitoring programme over 72km in 2 concessions in Cameroon + additional surveys)	0	4+
23	Funds from other sources currently amount to £189,000	£71,800	£60,200	£57,100	/	£154,000		£189,000

Table 2 Publications

Type (eg journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (eg contact address, website)	Cost £
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Project information sheet	Wildlife Wood Project: sustainable wildlife management in timber concessions, ZSL, 2008	Witherbys, London	www.zsl.org/wildlifewoodproject	£655.50
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3.4 Progress towards the project purpose and outcomes

The overall purpose of the WWP is to improve wildlife management in timber production forests in West and Central Africa, by determining robust indicators for wildlife that can be integrated into timber certification procedures, monitored, reported upon and inform concession management. In the intermediate phase of the WWP, research on wildlife indicators and dependence of local communities on hunting in and around concessions is progressing as planned. The project has constructed strong and productive partnerships with various organisations in order to implement its activities. In both countries, timber company partners have shown great interest in contributing to the WWP's project purpose. WWP's corporate partners are demonstrating willingness to lead the forest sector toward a concrete improvement in wildlife management in timber production forests on the basis of the scientific conclusions that the WWP will present to them. The Forest Stewardship Council (FSC) in both regional offices in Accra and Yaoundé has recognised the need for ecological indicators and both offices are currently reviewing their national/regional standards in consultation with WWP.

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

The fact that one of our partners in Cameroon, Pallisco, this year gained FSC certification in all its concessions, and our new partner in Ghana, Samartex, will undergo a final audit for FSC certification at the end of 2009, demonstrates that our timber company partners are committed to sustainable forest management. Pallisco, Rougier and Samartex have all provided (or will, in year 3 in the case of Samartex) wildlife teams to carry out bio-monitoring in their concessions. In addition, the WWP has had input into the development of FSC national standards. This engagement from both the timber industry and its certification bodies bodes well for improving the sustainability of wildlife management in African timber concessions in the long term.

4. Monitoring, evaluation and lessons

To monitor the progress of the WWP, monthly reports on meetings/fieldwork/plans/results are sent to ZSL's London office and to our project partners in Ghana, Cameroon and the UK. In addition, monthly financial reports from each project's component are checked by the project leader in London. At least annual field visits are made by the London team to Ghana and Cameroon and by the Ghana and Cameroon project managers to London, in order to discuss progress, including survey design, student projects, workplans, dissemination and policy issues.

Of particular note this year were the two exchange visits whereby London and Ghana staff Noëlle Kümpel, Chris Ransom and Nico Dauphiné visited WWP-Cam in January 2009 and then London and Cameroon staff Noëlle Kümpel and Eric Arnhem visited WWP-Ghana in January/February 2009. This provide the team with an invaluable opportunity to gain first-

hand experience of the differing field and political conditions under which each half of the project is operating, to harmonise and/or complement relevant wildlife monitoring and research within each region and to discuss and update project workplans, objectives and outputs. It is clear that although it will be impossible to entirely standardise project activities and outputs across both countries, this will not be necessary to reach useful overall conclusions for improved wildlife management in timber concessions in both the West and Central Africa regions, and this project exchange experience will help WWP-Ghana and WWP-Cam to work together more effectively as we near the critical final stages of the project.

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

Responses to specific comments from review of previous annual report:

Note Darwin support on website: this has been updated and the DI logo added.

2. Revise and enhance the logical framework: this has been done and agreed with Pat Hardcastle, our Year 1 annual report reviewer, and the Darwin Secretariat.

6. Other comments on progress not covered elsewhere

WWP-Cam has been successful in obtaining additional (matched) funding from the Rufford Maurice Laing Foundation to cover the costs of detailed socio-economic surveys in Cameroon not covered by this Darwin Initiative funding. Some additional funding has also been obtained to carry out comparisons of our transect, recce and camera trapping survey methods in additional sites through our collaboration with a wider project being carried out by CIFOR.

7. Sustainability

Regular discussion has been held with the FSC regional offices in Yaounde and Accra regarding wildlife indicators and High Conservation Value Forest, and the results of the WWP will feed into the development of standards and indicators. Capacity of timber company partners is being built to be able to monitor wildlife themselves in their concessions following the end of the WWP, by devising relevant indicators and training their new wildlife teams in monitoring them. Similarly, capacity is being built within the academic and government sectors to monitor wildlife in timber production forests, through the supervision of MSc student field projects and on the ground training of wildlife officials.

As more companies in West and Central Africa strive for timber certification, the indicators and monitoring methods developed through this project will be used in concessions other than those of the current project partners', and we hope that the students and officials trained through the WWP will play their part in the management and monitoring of these efforts. The national workshops and project report produced at the end of the project will be useful sources of information for all stakeholders and will be freely available.

Following the end of this current Darwin Initiative-funded project we hope to seek further funding to monitor the impacts of our management recommendations (made in the final year) in our current timber company partners' concessions, to extend the community element of the project and to assist other timber companies elsewhere in Ghana and Cameroon and in other countries within West and Central Africa in improving wildlife management in their forests.

8. Dissemination

Project news is disseminated to partners in monthly email newsletters as well as via regular meetings. A WWP information sheet has been produced, printed and distributed to project

stakeholders, and is available for download from the WWP website (www.zsl.org/wildlifewoodproject), which has been updated. Information on the project is also provided on the websites of timber company partners Timbmet, Pallisco and Rougier.

Presentations on the WWP aims and findings to date have been given to partners and to wider audiences. WWP-Ghana project affiliates presented results of the WWP in Ghana at two international scientific meetings: the Society for Conservation Biology (SCB) first Africa Section meeting in Accra, Ghana in January 2009 (“Using birds as indicators for wildlife conservation in Upper Guinea Forests of Ghana” by Nico Dauphine and “Cocoa farming and bushmeat hunting in a forest-farm mosaic in southwest Ghana” by Bjorn Schulte Herbruggen) and the Student Conference for Conservation Science (SCCS) in Cambridge, UK in March 2009 (“Implications of selective logging for birds in a moist semi-deciduous forest of Ghana” by Nathaniel Annorbah). WWP-Cam project manager Eric Arnhem gave a talk on the WWP at an ATIBT (*Association Technique Internationale des Bois Tropicaux*) meeting about *Biodiversity and HCVF* in Douala in February 2009. The report of this meeting is available on ATIBT’s website (www.atibt.com).

A road show is planned for Year 3 for the WWP-Cam which will carry out community education amongst the communities around the Pallisco and Rougier concessions.

Finally, national workshops are planned for the last quarter of Year 3 for both Cameroon and Ghana as well as a public event in London to share knowledge gathered during the WWP with all relevant stakeholders (including government, the timber industry, certification bodies, conservation and humanitarian NGOs and civil society) and ensure that the wildlife indicators and monitoring methods developed during the course of the project are integrated into national and regional certification standards.

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			
Conferences, seminars, etc			
Capital items/equipment (specify)			
Others (specify)			
Salaries			

2 x expatriate project coordinators	
2 x in-country co-leaders	
6 x community research assistants	
6 x forestry department rangers	
4 x timber company surveyors	
8 x local MSc students	
2 x cooks	
2 x drivers	
Total salaries	
TOTAL	

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

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

Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2008/09

Project summary	Measurable Indicators	Progress and Achievements April 2008 - March 2009	Actions required/planned for next period
<p>Goal: To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but constrained in resources to achieve</p> <p>The conservation of biological diversity,</p> <p>The sustainable use of its components, and</p> <p>The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources</p>			(do not fill not applicable)
<p>Purpose</p> <p>To improve wildlife management in timber production forests of West and Central Africa, by determining robust indicators for wildlife that can be integrated into timber certification procedures, monitored, reported upon and inform concession management.</p>	<p>Wildlife indicators accepted by timber certification authorities</p> <p>Best practice wildlife management protocols developed by timber producers</p> <p>Timber importers and consumers support Sustainable Forest Management in key areas.</p>	<p>Participation in the current development of a regional FSC standard for the Congo Basin and a national standard for Cameroon.</p> <p>Three new logging companies (SFID and Pallisco in Cameroon and Samartex in Ghana) have formally agreed to implement a bio-monitoring programme in their timber concessions.</p>	<p>Write-up of technical reports, peer-reviewed papers and a ZSL conservation report based on research work carried out by the WWP</p> <p>Results of research work presented at a national workshop in Cameroon and Ghana.</p> <p>International event to raise awareness of project results and recommendations in London.</p>
<p>Output 1.</p> <p>Wildlife indicators identified and dynamics of bushmeat trade documented in 2 rainforest regions (west and central Africa), which can be used to verify timber certification systems</p>	<p>Biological survey results show impact of logging and hunting on species by Year 2.5</p> <p>Socio-economic surveys completed in 2 – 3 case study areas (per country) by Year 2.5.</p>	<p>Technical reports and peer-reviewed papers will be compiled during Year 3 based on survey and monitoring data from the timber concessions of WWP's corporate partners, and will present indicators of logging and hunting disturbance.</p> <p>Bushmeat offtake and consumption in several rural villages has commenced in both Cameroon and Ghana and will be completed by Year 2.5 in both countries (and continued through Year 3 through MSc theses in Cameroon).</p>	

Activity 1.1 Field surveys in forest areas with varying hunting and logging impact.		<p>WWP-Ghana: Mist-netting, bird call, amphibian and mammal surveys are ongoing by project staff, MSc students and Samartex wildlife teams and will be completed by the end of 2009.</p> <p>WWP-Cam: Monthly wildlife monitoring surveys have been carried out in two concessions in the East Province of Cameroon by logging company staff since October 2008. This study has been designed in particular to identify mammal species that are vulnerable to logging activities.</p>
Activity 1.2 Hunter, h'hold and market surveys to assess off-take and local trade impact		<p>WWP-Ghana: Bjorn Schulte-Herbruggen's PhD fieldwork on dependence of villagers in Sui River FR on hunting has been ongoing throughout Year 2 and will end in May 2009 with results later in Year 3.</p> <p>WWP-Cam: A socio-economic study was conducted on the dependency of 6 local villages on forest resources and bushmeat consumption. A more detailed inventory of forest products is currently being compiled by an MSc student working in a rural village of the periphery of SFID and Pallisco's concessions, to be completed in Year 3.</p>
Output 2. Wildlife management plans developed and impacts monitored through cost-effective and scientifically rigorous wildlife monitoring systems in 2 case study forests (1 per country), to ensure best practice and monitor impacts.	<p>Wildlife Management Plans developed and being implemented in two case study forests by end Year 3.</p> <p>Regular monitoring reports produced by Ghanaian and Cameroonian researchers and timber company workers.</p>	<p>Wildlife management plans will be developed with timber companies in Year 3.</p> <p>SFID and Pallisco (WWP-Cam) and Samartex (WWP-Ghana) committed to recruit staff to create a wildlife team to respond to all wildlife-related matters. The WWP supervises the work of these teams and trains their members. The teams are producing (WWP-Cam) or will produce (WWP-Ghana) regular monitoring reports.</p>
Activity 2.1. Review forest management plans in case study forests and develop wildlife management actions with the timber companies and local communities.		<p>WWP-Cam: Both wildlife teams have been given the task to set up a comprehensive bio-monitoring programme and to monitor the occurrence of illegal activities in timber concessions. Reports produced by these teams, alongside the WWP's socio-economic research with local communities will be used to guide conservation efforts in the companies' concessions and input to the environmental part of the</p>

		<p>overall management plan.</p> <p>WWP-Ghana: Management plans will be reviewed with timber companies in Year 3 following the results of the wildlife and socio-economic surveys currently being carried out.</p>
<p>Activity 2.2.</p> <p>Cost-effective forest monitoring.</p>		<p>WWP-Ghana and WWP-Cam: Wildlife surveys are being conducted using different methodologies (e.g. linear transect surveys, 'recce' transect surveys and camera trapping) and their results compared in order to propose the most cost-effective and scientifically rigorous bio-monitoring protocols to corporate partners.</p>
<p>Output 3.</p> <p>Capacity building and awareness of timber certification and wildlife management increased among government, private sector, research and local communities, and timber consumers.</p>	<p>MSc students, timber company workers and wildlife rangers trained in wildlife indicator surveys and socio-economic surveys</p> <p>Participation in two national workshops (Yaounde, Accra) and one international workshop (Brussels)</p> <p>International / national newspaper and radio coverage</p>	<p>In both countries, MSc students, timber company workers and wildlife rangers have all been trained in wildlife surveys and some in socio-economic surveys to date.</p> <p>In early 2010, both WWP-Ghana and WWP-Cam will organise national workshops synthesising results and recommendations from all research work carried out during the tenure of the project.</p> <p>In Year 3, international and national (Ghana/Cameroon) press and radio coverage on the achievements of the WWP will be promoted. For WWP-Cam, a roadshow will be organised in villages surrounding SFID and Pallisco's concessions to familiarise local populations with wildlife conservation and management.</p>
<p>Activity 3.1.</p> <p>Capacity-building through training.</p>		<p>WWP-Cam: Two MSc theses from the University of Yaoundé I are being supervised by WWP-Cam and will be completed in Year 3. The first focuses on the effect of the linear transect network design on wildlife surveys. The second deals with the dependence of a rural village on forest resources, and specifically bushmeat. Two additional thesis projects from the University of Dshang's <i>Centre Régional d'Enseignement Spécialisé en Agriculture (CRESA)</i> are planned to begin in July 2009 (Year 3). Students are trained in field data collection and analysis, the use of specific software packages and scientific reporting. The wildlife teams of Pallisco and SFID timber companies have undergone initial and ongoing training in bio-monitoring.</p> <p>WWP-Ghana: Two MPhil projects are ongoing (due for completion Year</p>

	<p>3), testing bird calls and amphibians as indicators of logging impact respectively. One of these students, Nathaniel Annorbah, is being taken on as assistant manager to the WWP-Ghana and being trained in a variety of additional survey methods. Samartex timber company's wildlife team will be trained in wildlife monitoring at the start of Year 3.</p>
<p>Activity 3.2. Awareness raising of wildlife management in timber production forests.</p>	<p>WWP-Ghana and WWP-Cam: Through participation in several workshops aiming at reviewing/developing certification standards (WWP-Cam) and identifying HCV (WWP-Ghana), the WWP has promoted the need to integrate wildlife indicators in timber certification schemes. WWP's own workshops planned for the end of the project will continue and increase this awareness-raising.</p>

Annex 2 Project's full current logframe

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<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 constrained in resources to achieve</p> <p>The conservation of biological diversity,</p> <p>The sustainable use of its components, and</p> <p>The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources</p>			
Purpose			
<p>To improve wildlife management in timber production forests of West and Central Africa, by determining robust indicators for wildlife that can be integrated into timber certification procedures, monitored, reported upon and inform concession management.</p>	<p>Wildlife indicators accepted by timber certification authorities</p> <p>Best practice wildlife management protocols developed by timber producers</p> <p>Timber importers and consumers support Sustainable Forest Management in key areas.</p>	<p>Timber certification guidelines</p> <p>National forest regulations and timber certification guidelines</p> <p>Price premiums or consumer preference or procurement regulations</p>	<p>Wildlife laws included in criteria for production of "legal timber"</p> <p>Political priority given to changing forest regulations</p> <p>Markets are sensitive to price mark-up for certified timber.</p>
Outputs			
<p>1. Wildlife indicators identified and dynamics of bushmeat trade documented in 2 rainforest regions (west and central Africa), which can be used to verify timber certification systems</p>	<p>Biological survey results show impact of logging and hunting on species by Year 2.5</p>	<p>Technical reports and peer-reviewed papers</p>	<p>Suitable study sites can be found and timber companies are supportive</p>

<p>2. Wildlife management plans developed and impacts monitored through cost-effective and scientifically rigorous wildlife monitoring systems in 2 case study forests (1 per country), to ensure best practice and monitor impacts.</p> <p>3. Capacity building and awareness of timber certification and wildlife management increased among government, private sector, research and local communities, and timber consumers.</p>	<p>Socio-economic surveys completed in 2 – 3 case study areas (per country) by Year 2.5.</p> <p>Wildlife Management Plans developed and being implemented in two case study forests by end Year 3</p> <p>Regular monitoring reports produced by Ghanaian and Cameroonian researchers and timber company workers</p> <p>MSc students, timber company workers and wildlife rangers trained in wildlife indicator surveys and socio-economic surveys</p> <p>Participation in two national workshops (Yaounde, Accra) and one international workshop (Brussels)]</p> <p>International / national newspaper and radio coverage</p>	<p>Technical reports and peer-reviewed papers</p> <p>Wildlife management plans signed off by government and timber companies, with support of local communities</p> <p>Monitoring reports</p> <p>Best Practice Guidelines report</p> <p>MSc theses</p> <p>Training certificates</p> <p>Workshop reports</p> <p>Press and radio articles (international & local)</p>	<p>Permissions are granted by local administration (national permission has already been agreed)</p> <p>Timber companies have resources and government support to pilot new approaches to wildlife management in production forests</p> <p>Local communities and commercial hunters support, and engage with, wildlife management plans</p> <p>Suitable students and timber company workers can be recruited; suitable government rangers are made available</p>
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Activities	Activity Milestones	Assumptions
<p>1.1 Field surveys in forest areas with varying hunting and logging impact.</p>	<p>Yr 1: identify forests with 3 levels of hunting pressure (per country) and establish transects for baseline surveys</p> <p>Yrs 1-2: identify key hunters and users, and establish surveys (incl PRA & focal groups) of household and hunter use and trade</p>	<p>Sufficient records of different species to allow rigorous assessment of appropriate wildlife indicators</p> <p>Socio-economic data sufficiently robust to verify appropriate wildlife indicators</p>
<p>1.2 Hunter, h'hold and market surveys to assess off-take and local trade impact</p>	<p>Yr 2 (Jan 2009): biological and socio-economic surveys and results analysis completed (12 months data) and wildlife indicators identified.</p> <p>Yr 3 (Jan 2010): 2 technical reports (Ghana and Cameroon) completed and paper for scientific journal submitted</p>	<p>As above</p>
<p>2.1 Review forest management plans in case study forests and develop wildlife management actions with the timber companies and local communities</p>	<p>Yr 3: take preliminary results from socio-economic and biological surveys and integrate with forest management plans in 2 case study forests.</p> <p>Yr 3 (Sept 2008): specific wildlife management actions to be implemented in particular forest blocks.</p>	<p>As above</p>
<p>2.2 Cost-effective forest monitoring</p>	<p>Yr 2: local teams of government and timber company rangers monitor different forest blocks using standard survey methods for wildlife indicators.</p> <p>Yr 3 (Dec 2009): best practice guidelines drawn up for wildlife management in production forests.</p>	<p>As above</p>
<p>3.1 Capacity-building through training</p>	<p>Yrs 1 and 2: MSc students receive field training and carry out projects (2 per country per year)</p> <p>All years: Wildlife Dep rangers, timber company surveyors and community research assistants receive training in monitoring</p>	<p>As above</p>

<p>3.2. Awareness raising of wildlife management in timber production forests</p>	<p>Yr 2: Ghana-Cameroon exchange field visits</p> <p>Yr 1: press release of project launch in UK, Ghana and Cameroon.</p> <p>Yr 2: newspaper and radio articles: Ghana and Cameroon</p> <p>Yr 3: National workshops: Ghana & Cameroon</p> <p>[Yr 3: International workshop to launch Wildlife Indicators and Wildlife Management Guidelines].</p>	
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Annex 3 Onwards – supplementary material (optional but encouraged as evidence of project achievement)

Abstracts of the two SCB Africa Section presentations (Nico Dauphiné and Bjorn Schulte-Herbruggen), SCCS poster presentation (Nathaniel Annorbah) and ATIBT presentation (Eric Arnhem) can be supplied if desired.

The WWP information sheet is available for download at www.zsl.org/wildlifewoodproject and a low resolution electronic version is also attached. Print copies can be supplied if desired.

Checklist for submission

	Check
Is the report less than 5MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	
Is your report more than 5MB? If so, please advise Darwin-Projects@ltsi.co.uk that the report will be send by post on CD, putting the project number in the Subject line.	
Have you included means of verification? You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	
Do you have hard copies of material you want to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number.	
Have you involved your partners in preparation of the report and named the main contributors	
Have you completed the Project Expenditure table fully?	
Do not include claim forms or other communications with this report.	