

## Darwin Initiative Main Project Annual Report

**Important note:** To be completed with reference to the Reporting Guidance Notes for Project Leaders:

*it is expected that this report will be no more than 10 pages in length, excluding annexes*

**Submission Deadline: 30 April**

### Darwin Project Information

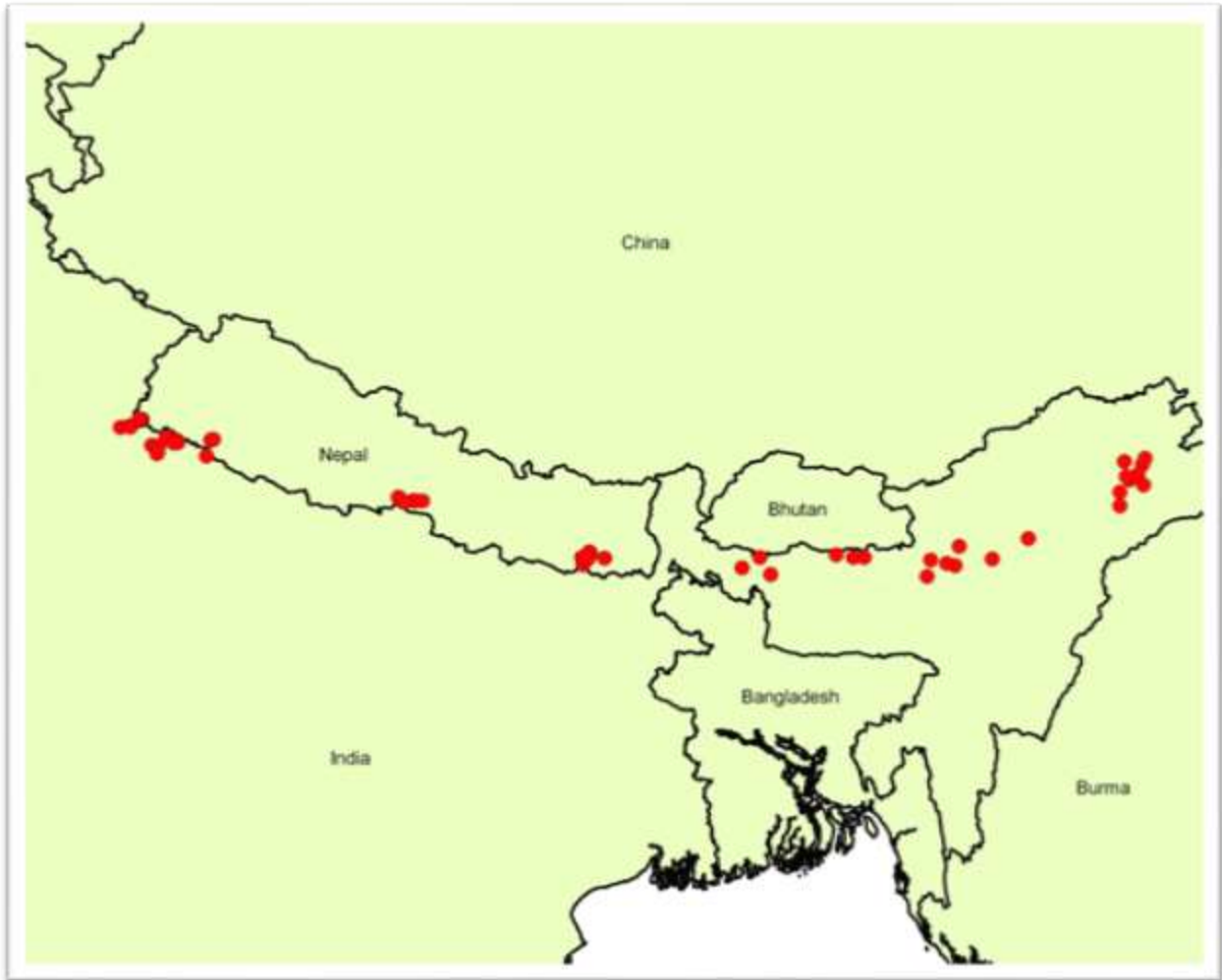
Project Reference	19-011
Project Title	Conserving the critically endangered Bengal Florican – a Terai flagship species
Host Country/ies	India and Nepal
Contract Holder Institution	Royal Society for the Protection of Birds (RSPB)
Partner institutions	Bird Conservation Nepal (BCN) and Bombay Natural History Society (BNHS India)
Darwin Grant Value	£290,417
Funder (DFID/Defra)	Defra
Start/end dates of project	01/10/12 to 30/09/16 (2 x 6-month no cost extension agreed)
Reporting period (e.g., Apr 2015 – Mar 2016) and number (e.g., Annual Report 1, 2, 3)	Apr 2015 to Mar 2016- Annual Report 4
Project Leader name	Ian Barber
Project website/blog/Twitter	
Report author(s) and date	Ian Barber – based on field reports from BNHS (Rohit Jha) and BCN (Jyotendra Thakuri) May 2016

### 1. Project Rationale

The decline of the Critically Endangered Bengal florican is inextricably linked to the loss of its Terai grassland habitat. By taking measures to ensure the survival of Bengal florican, through direct species protection and improved habitat management, the work will benefit an array of species unique to the Terai. Traditionally, conservation activities in the region have failed to incorporate the needs of lesser known species in the Terai, which include the Bengal florican, the hispid hare (EN), pygmy hog (CR) and bristled grassbird (VU). Grasslands globally are under threat, and are in retreat or decline in many areas due to their ease of conversion to agriculture, to unsustainable grazing practices, to the loss of natural browsers and to changes in atmospheric carbon, which promotes scrub encroachment. Grasslands are among the most threatened and least protected biomes on the planet.

This project was approved under round 18 which was the transition period between DEFRA and DfID funding. As such although the funding is through DfID, the project has a predominantly conservation focus with limited impacts on human development and welfare. The only benefits to people will arise out of involvement in grassland management trials and florican monitoring surveys.

The project location includes the low-lying grassland areas of the Terai in northern India and southern Nepal and the floodplain grasslands of the Brahmaputra River in North East India



**Fig 1** – The focus areas of the project, in southern Nepal and northern India, are indicated by red circles

## 2. Project Partnerships

The key relationships are with the two BirdLife Partners, the Bombay Natural History Society (BNHS India) in India and Bird Conservation Nepal (BCN) in Nepal. Both are well-established nature conservation organisations and recognised leaders in the field of bird research in their respective countries.

The RSPB has long-standing partnerships with both organisations going back many years and they form part of our international programme of support to BirdLife International Partners around the globe. The project partnerships remained strong throughout the year with regular contact maintained between all partners. The Project Leader made 3 visits to India/Nepal during the year and had site visits with the partners on each occasion. Good contact was maintained with the Department of National Parks and Wildlife Conservation (DNPWC) officials in Nepal.

In India, relations with officials in Uttar Pradesh have progressed and working at both Dudhwa and Pilibhit has been easier this year. This was undoubtedly helped by catching and tagging a bird at Dudhwa as soon as they establish the trial management areas which boosted the credibility of the project staff.

### 3. Project Progress

#### 3.1 Progress in carrying out project activities

##### Output 1 - Knowledge of threats and distribution of Bengal florican in India and Nepal enhanced

###### Activity 1.3 - Undertake Bengal florican population survey.

For survey work in 2015/16 we prioritised those areas highlighted by the MaxEnt model as being potential grassland areas which we had not surveyed before. In India the focus was on the grasslands along the Brahmaputra River in Assam. This is a very difficult area to access as most of the grasslands are islands (chapori's) during the breeding season due to the monsoon rains. Consequently, a team was assembled and a large boat hired to enable them to access the isolated areas. Unfortunately, the boat was only available from mid-May for a month which is rather late in the season for displaying males but it was the only opportunity to undertake the survey.

Despite visiting and surveying 80 grassland areas, no birds were observed directly by the team although reliable secondary sightings were obtained from local individuals. Birds were reported on 7 grassland areas with sightings from 5 grasslands earlier in the breeding season. Several areas were too disturbed to support floricans and other areas although undisturbed did not appear to have the right grass types or structure. There were dense *Saccharum spontaneum* stands, and/or *Tamarix* thickets which made walking difficult and the preferred *Imperata cylindrica* grasses were found in only a few chapori's. A brief report of the survey is attached under Annex 4 (Chapori survey).

In Nepal, the MaxEnt model identified potential sites in western lowlands of Nepal. In Bardia National Park a new area identified turned out to be a long and narrow island of grass and scrub in the middle of Karnali River which proved to be inaccessible.

Another potential site, Hirapur Phanta, alongside the Suklaphata Wildlife Reserve was visited in April but the GPS co-ordinates led to the bank of the dry river. The area within the river does not contain any grassland just short scatter bushes of *Acacia*. In eastern Nepal the Kankai Grassland area just east of Koshi Tappu was also surveyed but no evidence of Bengal florican was found and with the increasing road development going on it is unlikely that birds would survive there. A brief report of the survey is attached under Annex 4 (BCN report).

###### Activity 1.4 - Undertake satellite tracking studies.

Further attempts were made by the Indian traditional trappers to fit the remaining 8 satellite tags on birds in Nepal (Suklaphanta) and India (Pilibhit and Dudhwa). The team caught 4 birds in total but unfortunately, 2 birds had previously been tagged and so only 2 new birds were tagged, a male at Dudhwa and a male Suklaphanta. It is however useful to know that the previously tagged birds are doing well and showing no sign of distress or injury, but disappointing that only 2 new tags were fitted. There remain a further 6 tags to deploy which we will have one last attempt to fit in May 2016. (See BNHS report Annex 4)

###### Activity 1.5 - Download satellite data and measure distribution, population, movements and habitat requirements of Bengal florican.

Downloading continued and by the end of March 2016 we have the equivalent of 6,310 days (over 17 years) of data transmitted from the various tagged birds. The pattern of movement was similar to previous years with birds remaining in the breeding areas where they were initially tagged until around August/September and then they started to disperse to agricultural areas mainly adjacent to river courses outside of protected areas. The birds have moved no more than ~35km, which is also comparable to last season so it appears that a pattern of movement is beginning to emerge. The birds spend ~5 months on their breeding grounds and then ~7 months outside PAs in low-intensity agricultural landscape of mustard, lentil, wheat and sugarcane fields away from permanent human settlements

Location	Sex	Date Tagged	Days Transmitting	Total No. Days for each Site
Koshi Tappu Wildlife Reserve, Nepal	m	01/04/13	1,096	2,904
	m	02/04/13	1,095	
	f	19/04/14	713	
Suklaphanta Wildlife Reserve, Nepal	f	03/06/14	668	1,651
	m	03/06/14	668	
	m	22/05/15	315	
Pilibhit Reserve Forest, India	m	09/05/14	693	1,476
	m	12/05/14 (tag failed 17/08/14)	97	
	m	16/05/14	686	
Dudhwa Tiger Reserve, India	m	27/06/15	279	279
Grand Total				6,310 (~17.3 yrs)

Table 1 – Summary of satellite tag data for all birds up to end of March 2016 (data supplied by Argos)

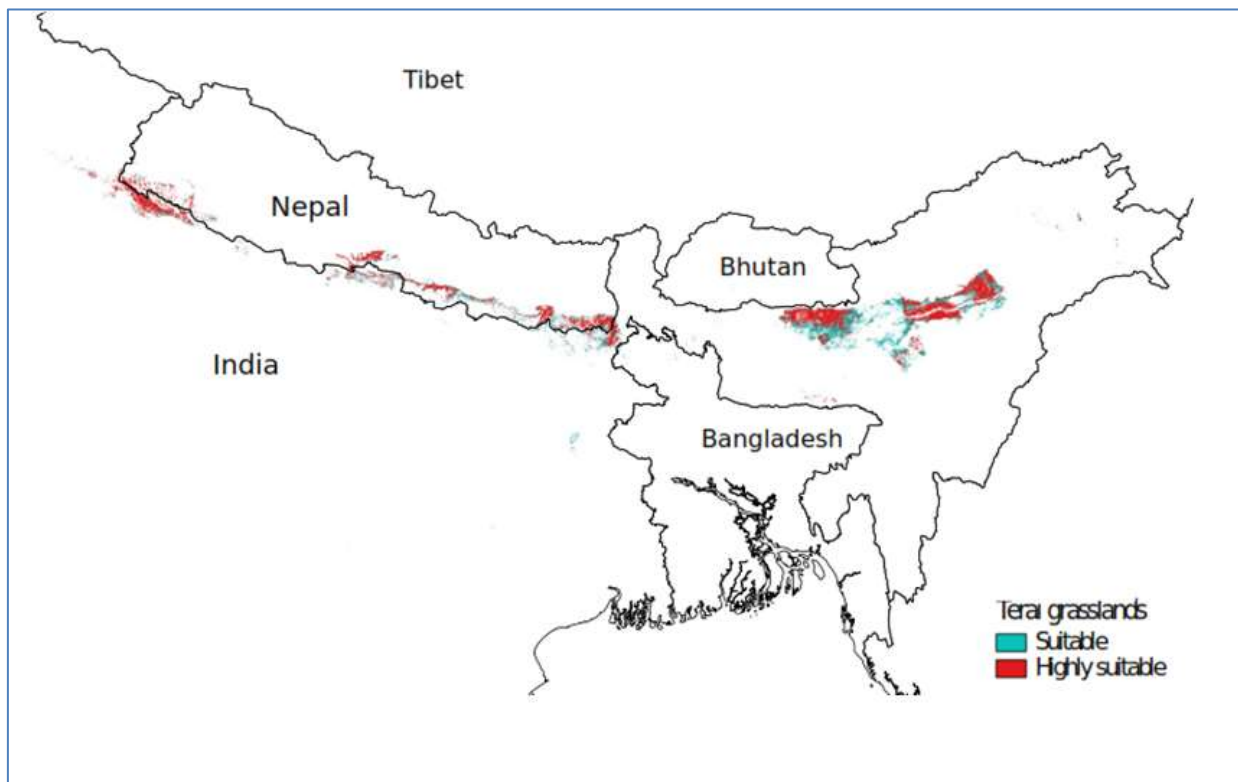
If we assume that the one tag that stopped transmitting was due to the death of the bird (although this has not been confirmed and may have been due to the tag failure itself) then we can calculate the survival rates for a given period. There is a 99.9% chance of a bird surviving for one day, a 94.4% chance of surviving for one year and a 74.9% chance of surviving for five years. Although it is a relatively small data set and the confidence limits are wide, this still represents a very high chance of survival and suggests the limiting factor is productivity not survival.

**Activity 1.6** - Research findings published in relevant reports/journals disseminated to key stakeholders.

Rohit Jha the Project Co-ordinator in India was successful in his application to attend the Cambridge Student Conference in March 2016 where he presented a poster on the project. Around 200 students from all over the world attended the conference. Rohit's poster title was "Bengal Florican habitat-use and movements" and highlighted the work with a video of a displaying male Bengal Florican.

He was also accepted for a four week internship with RSPB after the conference. During the internship he worked with RSPB research staff, including Dr Paul Donald, the scientific advisor for this project, and has started to analyse the data gathered since the start of the project on habitat and satellite tag movement. A draft paper will be ready by June and it is anticipated it will be published by the end of the project in September. (See BNHS report Annex 4)

Rohit was able to further refine the MaxEnt model predicting suitable grassland habitat areas (see Fig 2).



**Fig 2** – MaxEnt model showing potentially suitable grassland areas

**Output 2.** Management techniques to produce suitable Bengal florican habitat in and around Protected Areas developed and trialled

**Activity 2.3** - Undertake habitat trials on at least three sites

At Pithauli, the local community had removed more invasive scrub and small trees and prepared two 1ha plots in Jan/Feb 2015. The plots were then monitored during the 2015 breeding season from April-July.

At Koshi Tappu, the seven 1ha plots were prepared at the island site with different management variations and monitored for a similar period during the breeding season.

At Dudhwa NP in India, new experimental plots were established at short notice in late June. Two 1ha plots adjacent to display areas were cut leaving grass about 20-30cm high. These plots were the first we have been able to establish in India. (See BNHS report in Annex4)

**Activity 2.4** - Measure changes in habitat condition at trial sites.

We monitored the vegetation at the three trial sites and at other Bengal florican areas (both breeding and non-breeding) as indicated by the satellite tag data. The habitat data from these areas will be analysed before the end of the project in September once we have a full year of data. (See BCN and BNHS reports in Annex 4)

**Activity 2.5** - Monitor Bengal florican usage of trial sites.

Data have been collected on bird usage of the trial plots at all the sites.

At Pithauli a male (22 July 2015) and one female (10/11 April and 24 June 2015) were observed using the plots

At Koshi, birds were observed on the various plots for a total of 46 days. Altogether, males were recorded 18 times and females 20 times with two plots (D-Cut at ground, and F-uncut) the most regularly used by Floricans.

At Dudhwa NP a male was observed on one of the cut areas the very next morning and was finally tagged and caught 3 days later on 27<sup>th</sup> June. (See BNHS report in Annex 4)

**Activity 2.6** - Produce report on habitat usage of Bengal florican and disseminate to key stakeholders

Once the birds return to these areas from around February/March we continued to monitor the trial plots. The data we have gathered will be analysed and published by the end of the project and will indicate how the various management prescriptions are working.

At the country Action Plan workshops at the end of February we discussed the results from the trial plots to date with key stakeholders.

For details of the sites see the BCN and BNHS reports in Annex 4.

**Output 3.** Local communities, Senior Protected Area decision makers, relevant conservation organisations and local Bengal florican Conservation Groups are aware of management techniques for Bengal florican

**Activity 3.1** - Meet communities to advocate management techniques identified under objectives 1 and 2

In Nepal, engagement with communities around all four key areas (Suklaphanta, Bardia, Chitwan and Koshi Tappu) has progressed with two awareness campaigns in each of the four areas (eight in total) taking place between May and August. A consultant was hired and local Site Support Groups (SSGs) coordinated the events. A total of 728 people, ranging from Govt staff (central PA and local Forestry staff, District Administrative Office staff), Village Development Committees, Buffer zone User Groups, Community Forest User Groups, local communities, Security personals, students and teachers participated during the different events. As well as presentations and discussions, field visits to grasslands were organised and materials distributed. See BCN report in Annex 4.

In India, the Project Leader and Research Advisor visited the Kakilabari Agricultural Farm in Assam in February 2016. This abandoned seed farm is now used for extensive, almost organic, rice production but still manages to support several pairs of Bengal floricans year round. With low inputs to the single rice crop, the fields are left to revert back to natural herb growth during the winter months. This low level but varied vegetation structure has very little grazing or disturbance and provides an abundant food source of insects for the birds over winter. This gives us hope that it is possible to create suitable year round habitat on agricultural land if the grazing and inputs are limited. Aaranyak, a local NGO are monitoring the site and are engaged with our project.

**Activity 3.2** - Train individuals from local communities to take part in habitat trial monitoring.

Members of the local communities through SSGs have continued to participate in the habitat management trials in Nepal (see BCN report Annex 4). In India, participation in habitat monitoring has been through the NGO's in Assam.

**Activity 3.4** - Identify and establish contact with key national/regional decision makers and visit demonstration trials.

Contact with key decision makers has been maintained and information about the trial plots was disseminated at the Action Plan workshops in both countries. Official visits to the trial plots have been restricted to those attending the Awareness workshops in Nepal but did include key central Govt and local staff. (See BCN report Annex 4).

**Activity 3.5** - Publish habitat management guidance and advocate to key stakeholders

This will be done once we have analysed the results of the monitoring programme and established the optimal habitat requirements during both the breeding and non-breeding seasons.

**Output 4.** Capacity for Bengal florican Conservation Programme in India and Nepal built and sustainability and legacy of project outputs secured.

**Activity 4.1** - Workshop with PA staff and other key stakeholders to develop habitat management strategy for at least 4 Protected Area sites

In Nepal, meetings were held with the Director General, Deputy Director General and Ecologist at DNPWC and wardens and planning officers at Sukla and Chitwan. Building on our knowledge to date, grassland management interventions at the two sites were agreed and planning officers of these parks lead the implementations. See BCN report Annex 4.

**Activity 4.3** - Three local conservation groups participate in Bengal florican monitoring survey  
Three LCGs in Nepal and two NGOs in India have continued to participate in the monitoring surveys.

**Activity 4.4** - Workshops in India to review, and Nepal to develop National Species Recovery Plans.

The workshops were originally planned for October but circumstances meant they were put back until late February 2016. In Nepal, this was due to the ongoing blockade at all border crossings with India. This led to a chronic fuel shortage across the country and only essential vehicles had access to fuel. Thankfully the blockade was lifted in February enabling the “National Workshop on Bengal Florican Conservation Action Plan” to proceed on 29<sup>th</sup> Feb.

The Department of National Parks and Wildlife Conservation (DNPWC) has formed a task force to oversee the process and BCN are drafting a Bengal Florican Conservation Action Plan. The workshop was attended by 29 people with representatives from DNPWC, BCN, Ministry of Forestry and Soil Conservation (MFSC), Department of Forests (DOF), Chitwan National Park (CNP), Koshi Tappu Wildlife Reserve (KWR), District Forest Office Sunsari and Chitwan, WCT, NEFEJ, RSPB, BirdLife Asia, and Zoological Society of London-Nepal (ZSL Nepal). See BCN report Annex 4.

In India, there was another change in the Uttar Pradesh Chief Wildlife Warden position, the person essential to have on board to smooth the progress of the project. The post was left vacant for a while and although field activities continued, it was thought prudent to wait until the new CWW was appointed.

The workshop in India was held in Lucknow, Uttar Pradesh on 22<sup>nd</sup> but no one from NE India was able to attend. However, 22 people participated from Government officials and NGOs and the presentations and discussions were very productive. BNHS were tasked with drafting a new plan for consultation by the end of June. See BNHS report Annex 4.

**Activity 4.5** - Species Recovery Plans for Bengal florican endorsed and launched in India and Nepal

This will be developed before the project end in Sept 2016.

**Activity 4.6** - Funding activities undertaken to support local conservation groups

With the Darwin funded project due to finish in March 2016 we have been submitting proposals to enable continuation of the work post Darwin.

In Nepal we supported Jyotendra Thukari in his application for the ZSL EDGE Fellowship and his project “The conservation ecology of Bengal Florican in western Nepal” was accepted. The Fellowship grant is for £8k over 2-years and also includes with a 4-week Conservation Tools training course (completed in the Philippines February 2016) and ends with a 2-week Conservation Leadership training course in London in 2017.

We also helped Jyotendra submit a strong application for a Whitley Award (£35k) but despite getting down to the last 15 he was not chosen. However, the rejection email was very positive and he has been encouraged to apply again next year. See copy of emails Annex 4.

Jyotendra himself applied for a Taronga Zoo Grant on “The Conservation of the critically endangered Bengal Florican and community engagement in Nepal’s western terai” but this was also declined.

In India we have secured two more years of funding from several sources. BirdLife, through their Preventing Extinctions Programme, will give 15k pa for the next 2 years and BNHS themselves have budgeted ~£15k pa for staff salaries. RSPB will provide £13k to continue the satellite tag data download until March 2017 and assist with tagging work in Nepal until June 2016.

### 3.2 Progress towards project outputs

Output 1:	Knowledge of threats and distribution of Bengal florican in India and Nepal enhanced			Comments (if necessary)
	Baseline at start of project	Change recorded by 2016	Source of evidence	
Indicator 1.b Habitat requirements of Bengal florican (both breeding and non breeding) identified by Mar 2016	Limited knowledge of breeding habitat and nothing known about non-breeding habitats	Better understanding of requirements of vegetation type and structure at both breeding and non-breeding areas. Trial management plots yielding results	Sat tag data analysis and follow-up habitat monitoring. Trial management plots.	Our research methods are producing significant results and improving our knowledge. The results will be published by the end of the project
Indicator 1.c Maps of remaining and potential Bengal florican habitat in India and Nepal published by Sept 2016	Traditional breeding sites only known.	Traditional sites confirmed and other potential grasslands identified	MaxEnt modelling output maps. (See Fig. 2)	Our research methods are producing significant results and improving our knowledge. The results will be published by EOP
Output 2:	Management techniques to produce suitable Bengal florican habitat in and around Protected Areas developed and trialled			Comments (if necessary)
	Baseline at start of project	Change recorded by 2016	Source of evidence	
Indicator 2.a Two restoration management trials developed and are being utilised by Bengal floricans by Sept 2015	No trial management plots established	Three plots established (2 in Nepal and 1 in India)	See BCN and BNHS reports in Annex 4	
Output 3:	Local communities, Senior Protected			Comments (if necessary)



	Area decision makers, relevant conservation organisations and local Bengal florican Conservation Groups are aware of management techniques for Bengal florican			necessary)
	Baseline at start of project	Change recorded by 2016	Source of evidence	
Indicator 3.a Local farmers and pastoralists from one community involved in habitat management trials by Sept 2015.	Communities not positively engaged in Bengal florican conservation	Positive response particularly at sites in Nepal	See BCN report in Annex 4	
Indicator 3.d Grassland management strategy developed and adopted by four protected areas by EOP	Grassland strategies in PAs focussed on large mammals	Meetings held at 4 PAs in Nepal to discuss management requirements and ongoing trial in India	See BCN and BNHS reports in Annex 4	
Indicator 3.e Key decision makers endorse species recovery plans	No SRP in Nepal and outline SRP for India	Workshops held and SRPs being drafted	See BCN and BNHS reports in Annex 4	SRPs to be completed by EOP
Output 4:	Capacity for Bengal florican Conservation Programme in India and Nepal built, sustainability and legacy of project outputs secured			Comments (if necessary)
	Baseline at start of project	Change recorded by 2016	Source of evidence	
Indicator 4.a National Scientists and Park Authority staff are monitoring Bengal florican using consistent replicable protocols by March 2015 and seeking funding from government for Bengal florican conservation programmes by March 2016	No systematic monitoring of Bengal floricans	PA staff assisting NGOs to monitor Bengal florican numbers. Govt of India has earmarked resources for "Bustards" which includes Bengal florican.	See BCN and BNHS reports in Annex 4	Unlikely Govt of Nepal will have any resources for BF work other than annual management at PAs
Indicator 4.b Three local conservation groups monitoring and protecting floricans, by Sept 2014 and seeking funding to continue work beyond the end of	Ad hoc surveys by NGOs and birdwatchers.	BNHS & BCN have undertaken monitoring surveys for 3 years and success in funding applications to non-Govt sources.	See BCN and BNHS reports in Annex 4	

the project by Sept 2015				
Indicator 4.c Indian and Nepalese National Species Recovery Plan for Bengal florican published and launched by Sept 2016	No SRP in Nepal and outline SRP for India	Workshops held and SRPs being drafted	See BCN and BNHS reports in Annex 4	SRPs to be completed by EOP

### 3.3 Progress towards the project Outcome

Outcome: 1	Develop, demonstrate and advocate conservation measures for Bengal florican in India and Nepal			Comments (if necessary)
	Baseline at start of project	Change by 2016	Source of evidence	
Indicator 0.1 Needs of Bengal florican incorporated into management of four protected areas in India and Nepal	Protected Area management focus mainly on large mammals	Govt officials engaged in programme and inputting to SRPs. Partner NGOs working with their Governments to incorporate grassland management into PA plans	See BCN and BNHS reports in Annex 4	SRPs will be completed and endorsed by end of project. Bengal florican friendly grassland practices will be written into management plans when they are up for review.

### 3.4 Monitoring of assumptions

Outcome Assumption 1: State and National governments remain supportive of Grassland conservation management.

Comments: the overall assumption still holds true. To date the Governments of India and Nepal have been supportive of the project although there have been issues with bureaucracy in India and limited engagement from the Govt in Assam, NE India. The Govt in Nepal has been very supportive but have very limited resources to directly input and this may remain an issue when it comes to implementing management prescriptions at PAs.

Output Assumption 1: Research methods produce significant results

Comments: we have been closely monitoring the research methods and adjusting them accordingly. Most notably we have been measuring habitat parameters at known sites (e.g. from satellite data at breeding and non-breeding areas) as well as establishing and monitoring trial management plots. This habitat data along with the movement details from the 9 tagged birds has given us a unique dataset the analysis of which will greatly assist us in developing the species conservation strategy in terms of the optimum grass structure and hence management regimes necessary to help conserve the species.

Output Assumption 2: Management techniques for Bengal florican and spatial extent to which they should be applied are compatible with requirements of other key species

Comments: there has been nothing to indicate that it will not be possible to manage grasslands for Bengal floricans in areas where there are other key species.

Output Assumption 3a: Traditional grazing regimes are shown to benefit Bengal florican habitat.

Comments: the exact requirements for both breeding and non-breeding areas are not yet finalised but the indications are that the sward height and structure are the key components. To achieve the optimum structure a combination of cutting, grazing and burning at different times for different sites will be necessary and once these are known we will work with the key land managers to produce adequate areas of suitable habitat.

Output Assumption 3b: Advocacy and awareness raising is successful in encouraging positive land management for Bengal florican

Comments: engagement with the Government and communities in Nepal has been good and they have assisted in the monitoring surveys and trial management plots. The awareness events in Nepal were also well attended (see BCN report Annex 4), hence we are confident we can encourage more positive grassland management. In India the picture is less clear with some Government field staff being more positive than others (see below).

Output Assumption 4: Project partnerships remain strong throughout the duration of the project

Comments: the relationships with the in-country lead partners are well established going back almost 20 years and have remained strong throughout the project. Relations with the Nepalese Government officials have been good and BCN have good relations with the various government departments and officials. There has been a good attendance at the various meetings both centrally and at the various PAs and the Project Leader has met with the Head of Research on almost every visit to Nepal.

In India things are more formal and access to officials more difficult. At the various sites in Uttar Pradesh the government have generally engaged positively with the project but things have been less easy in Assam. Here we have encountered difficulties with gaining access to PAs and no permissions were given to satellite tag birds which was unfortunate as the situation in the NE is somewhat different to the Terai grasslands in northern India and Nepal. Despite frequent visits by BNHS to the NE limited progress was made and so there has not been any tagging attempts or trial management plots in the NE.

### **3.5 Impact: achievement of positive impact on biodiversity and poverty alleviation**

The project sub-goal is to significantly reduce the extinction threat to Bengal florican and will be measured by a reduction in threat category five years after the end of the project. The research component of the project will facilitate monitoring future changes in population and distribution. The project has developed bird and habitat monitoring protocols which will help in status assessment and defining the habitat requirements to be attained through grassland management techniques.

The unique satellite tagging work has helped us understand the previously unknown movements and habitat use outside of the breeding season and this is complemented by the breeding season survey work. Habitat monitoring and the trial plots are helping to develop management techniques to provide optimum grass conditions throughout the year.

The use of MaxEnt modelling identified several potential new grassland areas but to date has not resulted in any new sightings of floricans other than a foot print in 2014.

This project was awarded in 2012 as the Darwin scheme was transferring from DEFRA to DfID. It is primarily a conservation research project and as such is not explicitly focused on human development. However, the employment of local people is bringing some benefits to local communities as discussed below.

#### **4. Contribution to SDGs**

**SDG 15.5** - Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.

The Bengal florican is one of the world's most threatened species with a declining population of less than 1,000 individuals. The culmination of the project will establish Species Recovery Plans for both India and Nepal which will set out actions needed to improve grassland habitats and halt the species decline. Action plan workshops and meetings were held in 2016 and plans are being drafted.

**SDG 15.9** - By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts.

Grassland management prescriptions were further developed during the year and meetings held to disseminate information to PA managers. By the end of the project in September 2016 we will assist in reviewing individual site management plans and prescriptions necessary to safeguard the species.

**SDG 15.a** - Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems.

During 2016 the project was able to secure ~£70k worth of funding to enable the continuation of activities until 2017/18. Other sources will be explored before the end of the project in September 2016.

#### **5. Project support to the Conventions, Treaties or Agreements)**

Through this project, the Governments of India and Nepal will benefit from improved knowledge of the population and distribution of Bengal floricans. In addition, their habitat requirements will be better understood which will enable them to develop practical actions to help conserve this highly threatened species.

In summary:

- the research information to date is inputting to Article 12a, b & c and Article 7b, c & d and Aichi Target 19
- the trial management plots are contributing to Article 8c, d & e and Article 10b & c and Aichi targets 5 & 7
- the discovery of potential new grassland areas is in line with Article 12a and Aichi Target 5

In country partners have had limited contact with their CBD Focal Points during the year but we will feed our results into the next country CBD reports for India and Nepal before the end of the project.

#### **6. Project support to poverty alleviation**

This is a research conservation projects and as such poverty alleviation was not at the forefront of the project design. However, we are looking to develop mechanisms to allow sustainable use of Terai grassland habitat. We are starting to identify and develop management techniques that benefit Bengal florican with a view to advocating practices that will benefit local pastoralists. With increasing pressure on all grasslands and the lack of any coherent grassland policies, the benefits of sustainable grassland will be relevant to communities living in grassland areas across India and Nepal.

To date the only direct contribution towards human development and welfare is the short-term daily employment of local people. In India, 15 people were employed for two days to prepare the trial management plots at Dudhwa National Park in June. While in Nepal, trial plots were prepared at both Chitwan NP and Suklaphanta WS. At the former, 17 people from the Tharu and Bote indigenous communities and at the latter 21 Tharu people were employed for a month to complete the work. (See BCN and BNHS reports in Annex 4)

## **7. Project support to Gender equity issues**

There are no specific gender related objectives or equality impacts although women have been employed as part of the casual labour resource discussed above.

## **8. Monitoring and evaluation**

The Project Leader made three visits to India and Nepal throughout the year to liaise with the Project Co-ordinators and field staff for monitoring and evaluation purposes. Workplans and activities were agreed and any issues arising discussed. This is in addition to regular email/Skype/phone contact with project personnel. The project Research Supervisor Dr Paul Donald made one visit in February 2016 to visit sites in NE India and present some of the research findings at the Action Plan workshops in both India and Nepal.

Rohit Jha, the BNHS field researcher spent a month with RSPB in the UK on an internship to analyse the data in preparation for the publication of research outcomes later in the year. We agreed his plan of work for the remainder of the project to ensure all the necessary data are available.

The decision to put more effort into monitoring known bird locations as indicated by the satellite data has generated an invaluable dataset of year round habitat conditions at places where the birds were located. This, along with the monitoring of the trial management plots, has given us a unique dataset which will be key to developing the grassland management prescriptions for the conservation of the species.

## **9. Lessons learnt**

As stated in previous reports, Indian bureaucracy and local politics continued to be a hurdle at times. The slow progress in getting permissions to do work inside protected areas, particularly in Assam, and the ongoing issue of a blanket ban on using satellite tags has meant we have scaled back on work in Assam and to a lesser extent in Uttar Pradesh and put more effort into Nepal where it is generally easier to work. The close relationship with the Government Officials in Nepal has greatly helped in facilitating field activities.

The tragic earthquake in Nepal in April 2015 had a impact on the project for a few weeks until the BCN office and staff got back to normal working conditions. However, the blockade at all border crossings with India from the third week of September until mid-February had a negative impact on the project with supplies running low and little or no fuel available making field work particularly difficult. The national Species Action Plan workshop had to be postponed but this enabled more time to analyse and present the data at the workshops.

These delays and the subsequent project extension to September 2016 mean we will be in a better position to analyse the data and complete the project outcomes. We have also been successful in finding more funding enabling the same staff to maintain their employment on the project which greatly helps with continuity.

## **10. Actions taken in response to previous reviews (if applicable)**

- Activity 2.2/2.3: the information on the new trial plots at Koshi Tappu is unclear – floricans occur in the general area, but do they frequent the actual trial plots? It appears that the

design of the trials is not replicated in a way that will allow statistical analysis – is this a reflection of land availability, or staff time to prepare, manage and monitor the plots?

The seven 1ha trial plots were established in an area where we knew birds had been recorded. The management of the plots in terms of cutting and grazing was varied and bird usage recorded on a regular basis as staff time allowed.

- The Project team have clearly decided to focus their efforts in Nepal over the coming year, and therefore it would be helpful to revisit the logframe, with a view to revising the Outputs and Activities to reflect this.

The logframe was revised and agreed during the year.

- It would be useful in the Final Report to provide more information on the project's support to poverty alleviation and gender equality. For example, the team could indicate how the employment has contributed in real terms to the incomes of local people, and the gender of those involved.

As this is primarily a research and conservation project no resources were allocated to analyse what impact if any there has been on poverty alleviation or gender equality. However, we will continue to record the number of people and payments made for establishing the trial management plots and participating in survey work.

- No financial information was available for this review and it is recommended that this is submitted as soon as possible.

Financial report was submitted and approved shortly after last years annual report.

## **11. Other comments on progress not covered elsewhere**

Any difficulties encountered are discussed under section 9 – Lessons learnt

## **12. Sustainability and legacy**

The Darwin name and programme are relatively well known in India and Nepal and this project has added to that understanding through meetings, workshops, etc and to a lesser extent media coverage.

In Nepal we undertook a series of awareness meetings with communities around the key sites to raise awareness of Bengal florican and its dependency on grassland management. These proved successful and will facilitate the process of promoting management practices at the community level.

Training of in-country staff also contributes to the overall sustainability of the project and as well as field based survey skills we have supported both Jyotendra and Rohit in their funding/training applications. Jyotendra will receive training under his ZSL Fellowship grant (see Section 3.1 Activity 4.6) and Rohit participated in the Cambridge Student Conference and subsequent internship with RSPB (see Section 3.1 Activity 1.6).

Successful fundraising has enabled the project to continue in both countries and we will be looking for additional funding before the end of the project.

## **13. Darwin Identity**

The Darwin Initiative is generally understood by local communities and government staff and DI is mentioned and promoted at workshops and meetings. It was also highlighted at the Cambridge Student Conference in the UK when Rohit Jha from India attended in March this year. (See BNHS report in Annex 4)

As explained in previous years media related publicity has been kept low due to the fear of adverse publicity should any of the tagged birds suffer any injury or mortality, particularly after

one tag stopped transmitting in August 2014. However, one article did appear in a Nepalese national newspaper in April.

The blanket ban on the use of satellite tags for wildlife purposes in India also hindered publicity as BNHS were wary of how the Government might react to tags fitted prior to the ban.

#### 14. Project Expenditure

**Table 1 Project expenditure during the reporting period (1 April 2015 – 31 March 2016)**

<b>Project spend (indicative) since last annual report</b>	<b>2015/16 Grant (£)</b>	<b>2015/16 Total actual Darwin Costs (£)</b>	<b>Variance %</b>	<b>Comments (please explain any variance )</b>
Staff costs			101%	
Consultancy Costs				
Overhead Costs			92%	
Travel and subsistence			101%	
Operating Costs			104%	
Capital items				
Others				
Audit costs				
<b>TOTAL</b>			0%	

## Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2015-2016

Project summary	Measurable Indicators	Progress and Achievements April 2015 - March 2016	Actions required/planned for next period
<p><b>Impact</b></p> <p>Extinction threat to Bengal florican is significantly reduced</p>		<p>The survey work and satellite tag monitoring continues to increase our understanding of the species conservation requirements and the trial management plots have helped raise awareness of the need for positive management of the species among PA staff and communities. The MaxEnt model highlighting potential new grassland areas has been refined which may lead to new populations being found which will contribute towards an improved status.</p>	
<p><b>Outcome</b></p> <p>Develop, demonstrate and advocate conservation measures for Bengal florican in India and Nepal.</p>	<p>Needs of Bengal florican incorporated into management of four protected areas in India and Nepal</p>	<p>Satisfactory progress continues with the survey and satellite tracking work has increased our knowledge of the species movements and conservation needs. The trial management areas and habitat monitoring of non-breeding areas have helped our understanding of the conservation needs which is helping us engage with Government officials and community land managers.</p>	<p>Fit the remaining satellite tags and monitor bird movements. Monitor trial management plots. Finalise Action Plans and develop management prescriptions for key areas. Work with land managers to adopt these prescriptions.</p>
<p><b>Output 1.</b> Knowledge of threats and distribution of Bengal florican in India and Nepal enhanced.</p>	<p>1a. Population size in sub-continent estimated and key sub-populations identified by Sept 2014.</p> <p>1b. Habitat requirements of Bengal florican (both breeding and non</p>	<p>Two additional birds tagged and habitat monitoring data enabled the MaxEnt hotspot map to be refined. Brahmaputra River island survey had no confirmed sightings but reliable records were provided by local individuals.</p> <p>Indicators appropriate</p>	



	breeding) identified by Mar 2016. 1c. Maps of remaining and potential Bengal florican habitat in India and Nepal published by Sept 2016.	
<b>Activity 1.3</b> - Undertake Bengal florican population survey		Survey undertaken along Brahmaputra River as a result of MaxEnt model. No birds found but positive reports from local communities. Areas in Nepal also surveyed but no birds sighted.  A few areas around Pilibhit TR and Dudhwa NP will be undertaken next year.
<b>Activity 1.4</b> - Undertake satellite tracking studies		Additional 2 birds tagged (1 in Nepal, 1 in India), giving 9 tags transmitting in total. Final attempt to deploy remaining tags in April/May 2016. Now have 1 full year of vegetation monitoring at bird locations (breeding and non-breeding areas).
<b>Activity 1.5</b> - Download satellite data and measure distribution, population, movements and habitat requirements of Bengal florican		Tagged birds have given >6,300 days of data and pattern of movement emerging. High chance of survival rate suggests productivity is the limiting factor.
<b>Activity 1.6</b> - Research findings published in relevant reports/journals disseminated to key stakeholders		Rohit Jha spent a month at RSPB looking at data and refining MaxEnt model. Paper to be published by end of project in Sept 2016.
<b>Output 2.</b> Management techniques to produce suitable Bengal florican habitat in and around Protected Areas developed and trialled	2. Two restoration management trials developed and are being utilised by Bengal floricans by Sept 2015	Management techniques being developed using data from trial plots and habitat measurements at occupied sites.  Indicator appropriate
<b>Activity 2.3</b> - Undertake habitat trials on at least three sites		Existing trial plots at Koshi Tappu and Pithauli continued and new trial areas prepared at Dudhwa TR in India.
<b>Activity 2.4</b> - Measure changes in habitat condition at trial sites		Habitat at all three sites were monitored as well as at breeding and non-breeding areas.
<b>Activity 2.5</b> - Monitor Bengal florican usage of trial sites		Birds recorded at all sites and one male caught and tagged at Dudhwa TR.
<b>Activity 2.6</b> - Produce report on habitat usage of Bengal florican and disseminate to key stakeholders		Results will form part of overall research paper but results disseminated at Action Plan meetings.

<p><b>Output 3.</b> Local communities, Senior Protected Area decision makers, relevant conservation organisations and local Bengal florican Conservation Groups are aware of management techniques for Bengal florican.</p>	<p>3a. Local farmers and pastoralists from one community involved in habitat management trials by Sept 2015.</p> <p>3b. Three local Bengal florican support groups established by Sept 2014.</p> <p>3d. Grassland management strategy developed and adopted by four protected areas by EOP.</p> <p>3e. Key decision makers endorse species recovery plans</p>	<p>Engagement at main sites with key stakeholders and land managers has progressed. Exact management techniques still being defined.</p> <p>Indicators still appropriate</p>
<p><b>Activity 3.1</b> - Meet communities to advocate management techniques identified under objectives 1 and 2</p>		<p>Awareness campaign with communities and Govt officials at key sites in Nepal</p>
<p><b>Activity 3.2</b> - Train individuals from local communities to take part in habitat trial monitoring</p>		<p>SSGs continued to assist in habitat monitoring in both countries.</p>
<p><b>Activity 3.4</b> - Identify and establish contact with key national/regional decision makers and visit demonstration trials</p>		<p>Contact maintained particularly at workshops. Trial plots visited as part of Awareness events.</p>
<p><b>Activity 3.5</b> - Publish habitat management guidance and advocate to key stakeholders</p>		<p>Data analysis progressed and key stakeholders updated at workshops etc</p> <p>Data analysis and advocacy work to be completed by Sept 2016.</p>
<p><b>Output 4.</b> Capacity for Bengal florican Conservation Programme in India and Nepal built and sustainability and legacy of project outputs secured.</p>	<p>4a. National Scientists and Park Authority staff are monitoring Bengal florican using consistent replicable protocols by March 2015 and seeking funding from government for Bengal florican conservation programmes by March 2016</p> <p>4b. Three local conservation groups monitoring and protecting floricans, by Sept 2014 and seeking funding to continue work beyond the end of</p>	<p>Involvement of communities and PA staff remains good, particularly in Nepal. Awareness and Species Recovery workshops held and recovery plans being developed.</p> <p>Fundraising efforts have progressed well with funding for the next 2 years secured.</p> <p>Recovery Plans to be finalised and disseminated by end of project.</p>

	<p>the project by Sept 2015.</p> <p>4c. Indian and Nepalese National Species Recovery Plan for Bengal florican published and launched by Sept 2016.</p>	
<b>Activity 4.1</b> - Workshop with PA staff and other key stakeholders to develop habitat management strategy for at least 4 Protected Area sites		Grassland management interventions undertaken in Nepal at Sukla WR and Chitwan NP.
<b>Activity 4.3</b> - Three local conservation groups participate in Bengal florican monitoring survey		LCGs participated in survey work in India and Nepal
<b>Activity 4.4</b> - Workshops in India to review, and Nepal to develop National Species Recovery Plans		Workshops held and plan drafting underway
<b>Activity 4.5</b> - Species Recovery Plans for Bengal florican endorsed and launched in India and Nepal		To be completed by end of project
<b>Activity 4.6</b> - Funding activities undertaken to support local conservation groups		Funding secured for next 2 years

## Annex 2 Project's full current logframe as presented in the application form (unless changes have been agreed)

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Goal:</p> <p>Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.</p>			
<p>Sub-Goal:</p> <p>Extinction threat to Bengal florican is significantly reduced.</p>	<p>Five years after end of project (EOP) Bengal florican is downgraded from Critically Endangered to a lower category of threat.</p>	<ul style="list-style-type: none"> <li>- IUCN publications.</li> <li>- Peer reviewed publications.</li> </ul>	
<p>Purpose</p> <p>Develop, demonstrate and advocate conservation measures for Bengal florican in India and Nepal.</p>	<p>Needs of Bengal florican incorporated into management of four protected areas in India and Nepal.</p>	<ul style="list-style-type: none"> <li>- National park management plans</li> <li>- Community grassland management plans</li> </ul>	<p>State and National governments remain supportive of Grassland conservation management.</p>
<p>Outputs (add or delete rows as necessary)</p> <p>1. Knowledge of threats and distribution of Bengal florican in India and Nepal enhanced.</p>	<p>1a. Population size in sub-continent estimated and key sub-populations identified by Sept 2014.</p> <p>1b. Habitat requirements of Bengal florican (both breeding and non breeding) identified by Mar 2016.</p> <p>1c. Maps of remaining and potential Bengal florican habitat in India and Nepal published by Sept 2016.</p>	<ul style="list-style-type: none"> <li>- Population monitoring reports</li> <li>- IUCN bustard group reports</li> <li>- Peer reviewed publications</li> </ul>	<p>Research methods produce significant results.</p>
<p>2. Management techniques to produce suitable Bengal florican habitat in and around Protected Areas developed and trialled.</p>	<p>2. Two restoration management trials developed and are being utilised by Bengal floricans by Sept 2015</p>	<ul style="list-style-type: none"> <li>- Habitat management trial reports.</li> <li>- records of Bengal Floricans on restoration trial areas</li> </ul>	<p>Management techniques for Bengal florican and spatial extent to which they should be applied are compatible with requirements of other key species.</p>

		- Media reports	
3. Local communities, Senior Protected Area decision makers, relevant conservation organisations and local Bengal florican Conservation Groups are aware of management techniques for Bengal florican.	<p>3a. Local farmers and pastoralists from one community involved in habitat management trials by Sept 2015.</p> <p>3b. Three local Bengal florican support groups established by Sept 2014.</p> <p>3d. Grassland management strategy developed and adopted by four protected areas by EOP.</p> <p>3e. Key decision makers endorse species recovery plans</p>	<ul style="list-style-type: none"> <li>- Project progress reports</li> <li>- Grassland habitat management guidelines</li> <li>- Endorsed species recovery plans</li> </ul>	<p>Traditional grazing regimes are shown to benefit Bengal florican habitat.</p> <p>Advocacy and awareness raising is successful in encouraging positive land management for Bengal florican.</p>
4. Capacity for Bengal florican Conservation Programme in India and Nepal built, sustainability and legacy of project outputs secured.	<p>4a. National Scientists and Park Authority staff are monitoring Bengal florican using consistent replicable protocols by March 2015 and seeking funding from government for Bengal florican conservation programmes by March 2016</p> <p>4b. Three local conservation groups monitoring and protecting floricans, by Sept 2014 and seeking funding to continue work beyond the end of the project by Sept 2015.</p> <p>4c. Indian and Nepalese National Species Recovery Plan for Bengal florican published and launched by Sept 2016.</p>	<ul style="list-style-type: none"> <li>- Park Authority florican monitoring reports</li> <li>- Park Authority funding applications</li> <li>- Local conservation group reports</li> <li>- Funding applications to support Local conservation groups</li> <li>- Bengal florican National Species Recovery Plans</li> <li>- Media reports of Recovery Plan launch.</li> </ul>	<p>Project partnerships remain strong throughout the duration of the project.</p>

### Annex 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 reporting period	Total planned during the project
Established codes								
4A	Catching and tagging birds in Nepal	2	1	1	2	6	0	3
4B	Number of training weeks to be provided	1	2	3	4	10	0	10
4C	Catching and tagging birds in Nepal	2	2	1	1	6	0	2
4D	Number of training weeks to be provided	3	2	3	5	13	0	10
6A	Technical Evaluation Workshop in Dudhwa NP, India and Chitwan, Nepal	30	0	40	0	70	0	10
6B	Number of training weeks to be provided	1 <sup>1</sup>	0	1 <sup>1</sup>	0	2	0	4
7	Poster and sticker for awareness raising in Nepal	0	0	2	0	2	0	0
8	Trips to project areas in India and Nepal	9	3	4	4	20	0	8
9	SRPs for India and Nepal	0	0	0	0	0	2	2
11A	Peer reviewed papers	0	0	0	0	0	1	1
12A	Database established of historical records and new survey data from year 1 & 2 of project	0	1	0	0	1	0	1
14A	Technical Evaluation Workshop in Dudhwa NP, India and Chitwan, Nepal	0	0	2	2	4	2	2
14B	Presentation of results at British Birdwatching Fair	0	0	1	1	2	1	1
15A	Number of national press releases in host country(ies)	4	0	1	1	6	1	4
15B	Number of local press releases in host country(ies)	2	2	0	0	4	2	6
18C	Number of local TV programmes/features in host country(ies)	1	0	0	0	1	0	2

22	Trial management field plots established at Pithauli and Koshi Tappu	0	2	0	1	3	1	3
23	UK salaries and overheads	£7,360	£8,720	?	?	£16,080	£19,162	£50,775
	Travel and subsistence	£1,868	£22	?	?	£1,890	£1,200	£3,000
	Operating Costs	£0	£0	?	?	£0	£4,800	£12,000
	Equipment – radio tags, Esri ArcGIS software, vehicle	£32,403	£12,000	?	?	£44,403	£12,000	£43,200
	<b>Total</b>	<b>£41,631</b>	<b>£20,742</b>	<b>?</b>	<b>?</b>	<b>£62,373</b>	<b>£37,162</b>	<b>£108,975</b>
New - Project specific measures								

**Table 2 Publications**

<b>Title</b>	<b>Type</b> (e.g. journals, manual, CDs)	<b>Detail</b> (authors, year)	<b>Gender of Lead Author</b>	<b>Nationality of Lead Author</b>	<b>Publishers</b> (name, city)	<b>Available from</b> (e.g. weblink or publisher if not available online)