# CEPF SMALL GRANT FINAL PROJECT COMPLETION REPORT

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| **Organization Legal Name:** | University of East Anglia |
| **Project Title:** | Conservation Ecology of Bengal Florican |
| **Date of Report:** | 26.11.10 |
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**CEPF Region:** Indo-Burma

**Strategic Direction:** **1.** *'Safeguard priority globally threatened species in Indochina by mitigating major threats'* (especially **1.1** *'Identify and secure core populations of 67 globally threatened species from overexploitation and illegal trade')*.

**Grant Amount:** $18,416

**Project Dates:** January 2009 – October 2010

**Implementation Partners for this Project (please explain the level of involvement for each partner):**

Wildlife Conservation Society Cambodia Program – high level of involvement with frequent communication on the project, support, some joint fieldwork, use of office facilities and loan of equipment items. Project findings regularly discussed along with implications for conservation measures.

Angkor Centre for Conservation of Biodiversity (ACCB) – substantial assistance with fieldwork contributing to the successful deployment of transmitters. Help and advice.

BirdLife International in Indochina Cambodia Programme – communication on project.

## Conservation Impacts

***Please explain/describe how your project has contributed to the implementation of the CEPF ecosystem profile.***

This project has enabled us to identify core non-breeding areas used by the Critically Endangered Bengal florican in Cambodia. Prior to our satellite-tracking study, the whereabouts of Bengal florican during the wet season was poorly known, so that threats could not be assessed and conservation measures could not be implemented. We have been able to assess threats to these areas, determine habitat requirements and advise on locations that should be a priority for protection in order to safeguard habitat for this species during the wet season.

***Please summarize the overall results/impact of your project against the expected results detailed in the approved proposal.***

**1. Non-breeding season movements, range and habitat**

During February 2009, we fitted seven Bengal florican (five females and two males) with solar satellite transmitters, in addition to 3 males already satellite-tagged in a trial in 2008. These 10 florican were from three key grassland breeding sites in Kompong Thom Province (Stoung-Chikreng IFBA, San Kor and Baray IFBA). We successfully tracked the movements of these birds away from dry-season breeding areas (floodplain grasslands) to previously unknown wet-season areas. Once non-breeding locations had been determined, habitat requirements and threats could be assessed. Non-breeding areas were between 20 and 40km from the breeding sites. They consisted of open dry dipterocarp forest, comprised of a mosaic of groundcover types including grassland, scrub and traditional low intensity rice fields. Most of the non-breeding sites were found to be under threat due to rapid, large-scale land clearance for plantations (mostly acacia and rubber). Habitat requirements will be assessed in more detail by relating satellite locations already obtained from the telemetry, to a habitat classification of a satellite image (based on ground-truthed data obtained in 2009 and 2010). In addition, finer scale habitat selection will be assessed by comparing field measures obtained in 2010 at satellite locations and random points.

Additional fieldwork was conducted in 2010 under a 2$^{nd}$ CEPF grant ('Identifying wet season sites and non-breeding habitats used by the critically endangered Bengal Florican in Cambodia') as we had the opportunity to deploy 10 more satellite transmitters, doubling our sample size, as well as making use of multiple season data from florican tagged in 2008 and 2009. This provided a much better understanding of wet season movements and habitat use.

Our research has enabled us to locate non-breeding areas, assess habitat requirements and identify threats that urgently need to be addressed. In addition we have identified key areas that should be a priority for protection and conservation activities.

**2. Female nesting locations and habitat**

The five satellite-tagged females were tracked through the breeding season. None were found to be nesting and indeed this proved to be the case for many other females at these sites. For a critically endangered species this apparent low productivity is very worrying. High human disturbance (which florican are very sensitive to) could be a major factor. This disturbance takes several forms. Firstly, the continued rapid spread of intensive dry season rice agriculture results in direct habitat loss of suitable nesting habitat for a strongly site-faithful species (some nests were reported when females were flushed by people harvesting in dry season rice fields and subsequently abandoned). Ploughing of breeding habitat with tractors for rice fields also took place in the middle of the breeding season. We found several nests to have been destroyed this way and more will have been lost that went unrecorded. With increased human activity more domestic dogs are present in the grasslands which could potentially predate the eggs and chicks of this ground-nesting species.

The satellite transmitters enabled us to track movements of female foricans during the breeding season, revealing relatively large, often multi-modal home ranges, that were not detected in previous studies reliant just on radio-tagged birds (for which detection range is much more limited). These patterns have implications for the area of land that needs to be protected in order to support females. 152 satellite locations were visited along with a large sample of random points (259) and habitat data were collected to assess preferences of females. Broad-scale habitat selection will also be assessed by relating transmitter locations to a ground-truthed habitat classification map.

This enabled us to assess female home-ranges, movements and habitat selection during the breeding season. This means that management practices will be able to account for the requirements of not only males but also now females.

**3. Changes in grassland habitat**

Over 550 ground-truth points were visited to enable the creation of a supervised habitat classification of a satellite image (Landsat 7). This will be compared with previous habitat maps from 1995/6 and 2005 to quantify the amount of grassland habitat lost. Habitat structure, quality and scrub content will be assessed from 104 locations visited where data are also available for comparison from 2005/6. Grazing intensity was measured using distance sampling transects at Stoung-Chikreng, with comparable data available from 2003.

Assessing not only the amount of grassland habitat directly lost but also more subtle changes in the quality and structure of remaining grassland, as well as changes in grazing intensity, is essential for the effective management of the IFBAs and understanding processes within this important habitat.

***Please provide the following information where relevant:***

**Hectares Protected:** n/a
**Species Conserved:** n/a
**Corridors Created:** n/a

***Describe the success or challenges of the project toward achieving its short-term and long-term impact objectives.***

Satellite-transmitters were successfully deployed and all data required to achieve our objectives have been collected. We were very fortunate to receive additional funding for 2010 to deploy 10 more satellite transmitters (bringing the total to 20). This expansion of the project has meant that some data analysis was postponed to enable data to be collected from more units, thus building up a more complete picture of movements and habitat use based on a larger sample size. We are now in the process of analysing the combined data from 2009 and 2010 and writing up the results. We are confident that once this is complete we will have met the short-term impact objectives and will be progressing with the long-term impact objectives.

***Were there any unexpected impacts (positive or negative)?***

## Lessons Learned

***Describe any lessons learned during the design and implementation of the project, as well as any related to organizational development and capacity building. Consider lessons that would inform projects designed or implemented by your organization or others, as well as lessons that might be considered by the global conservation community.***

***Project Design Process: (aspects of the project design that contributed to its success/shortcomings)***

***Project Implementation: (aspects of the project execution that contributed to its success/shortcomings)***

***Other lessons learned relevant to conservation community:***

## ADDITIONAL FUNDING

***Provide details of any additional donors who supported this project and any funding secured for the project as a result of the CEPF grant or success of the project.***

**The funding listed below was secured for follow-on work that builds on this project.**

| Donor | Type of Funding* | Amount | Notes |
|---|---|---|---|
| Critical Ecosystem Partnership Fund | B | $17,813 | For deployment of additional satellite transmitters and expansion of wet season study |
| Mohammed bin Zayed Species Conservation Fund | B | $20,000 | For 8 satellite transmitters |
| Chester Zoo | B | $5,888 | For 2 satellite transmitters |
| International Fund for Houbara Conservation (IFHC) | B | Not specified. Estimated at $18,000 for all 20 satellite transmitters for 1 year. | All satellite transmitters registered under Argos account of IFHC to directly cover all data download costs for duration of transmitter life |

***Additional funding should be reported using the following categories:**

***A*** *Project co-financing (Other donors contribute to the direct costs of this CEPF project)*

***B*** *Grantee and Partner leveraging (Other donors contribute to your organization or a partner organization as a direct result of successes with this CEPF project.)*

***C*** *Regional/Portfolio leveraging (Other donors make large investments in a region because of CEPF investment or successes related to this project.)*

## Sustainability/Replicability

***Summarize the success or challenge in achieving planned sustainability or replicability of project components or results.***

WCS continue to carry out non-breeding season surveys for florican to expand our knowledge of numbers in different areas. The areas identified from the satellite-tracking are now being targeted for surveys and this is resulting in more florican being encountered. Satellite transmitters deployed in 2008, 2009 and 2010 continue to produce locations so tracking is ongoing. We are also working with WCS and ACCB to promote for protection key non-breeding areas highlighted by this project.

***Summarize any unplanned sustainability or replicability achieved.***

In 2012 ACCB plan to conduct a lake-wide survey of all potential florican breeding habitat (rather than restricted just to the IFBAs and other grassland sites in Kompong Thom Province) to assess remaining grassland sites and establish which of those still hold florican. This is essential for obtaining an up to data population estimate of Bengal florican in Cambodia, assessing the population decline and rate of habitat loss.

## Safeguard Policy Assessment

***Provide a summary of the implementation of any required action toward the environmental and social safeguard policies within the project.***

A detailed assessment of the risks of satellite/radio-tagging Bengal florican was conducted prior to catching in 2009, based on our experiences during deployment of radio (8) and satellite (3) transmitters in 2008. A strict protocol was implemented to minimize any risks. This proved highly effective, and no problems were encountered.

## Performance Tracking Report Addendum

### CEPF Global Targets

# (Enter Grant Term)

**Provide a numerical amount and brief description of the results achieved by your grant.**
**Please respond to only those questions that are relevant to your project.**

| Project Results | Is this question relevant? | If yes, provide your numerical response for results achieved during the annual period. | Provide your numerical response for project from inception of CEPF support to date. | Describe the principal results achieved from July 1, 2010 to June 30, 2011. (Attach annexes if necessary) |
|---|---|---|---|---|
| 1. Did your project strengthen management of a protected area guided by a sustainable management plan? Please indicate number of hectares improved. | N/A | | | Please also include name of the protected area(s). If more than one, please include the number of hectares strengthened for each one. |
| 2. How many hectares of new and/or expanded protected areas did your project help establish through a legal declaration or community agreement? | N/A currently.<br><br>This is a long-term aim. | | | We hope that key non-breeding areas identified from the satellite tracking study (still ongoing) will in future receive protected status. |
| 3. Did your project strengthen biodiversity conservation and/or natural resources management inside a key biodiversity area identified in the CEPF ecosystem profile? If so, please indicate how many hectares. | N/A currently.<br><br>This is a long-term aim. | | | Results from satellite-tracking females in the breeding season have conservation and habitat management implications for two key biodiversity areas; (32.) Stung-Chi Kreng-Kompong Sray (7,459ha) and (35.) Stung Sen-Santuk Baray (11,799ha), which we hope will be addressed in the future. |
| 4. Did your project effectively introduce or strengthen biodiversity conservation in management practices outside protected areas? If so, please indicate how many hectares. | N/A currently.<br><br>This is a long-term aim. | | | Habitat data collected at non-breeding satellite locations has determined habitat requirements which should be incorporated into management practices in these (currently unprotected) areas. |
| 5. If your project promotes the sustainable use of natural resources, how many local communities accrued tangible socioeconomic benefits? Please complete Table 1below. | N/A | | | |

## Additional Comments/Recommendations

## Information Sharing and CEPF Policy

CEPF is committed to transparent operations and to helping civil society groups share experiences, lessons learned, and results. Final project completion reports are made available on our Web site, www.cepf.net, and publicized in our newsletter and other communications.

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