



Conservation Leadership Programme

Final Project Report, June 2013- July 2014

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Project Title:

Conservation Ecology of Giant Ibis in Western Siem Pang IBA

Project Location: Cambodia, Western Siem Pang IBA

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Group photo during the Giant Ibis workshop in Phnom Penh

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Table of Contents

Section1: Summary and Background.....	4
Summary	4
Background	4
Section 2: Summary of Objectives, Activities and Outputs.....	5
Objective 1: To reduce direct threats (hunting and nest disturbance) through community based nest protection schemes.....	5
Outputs from Objective 1:	6
Objective 2: To improve understanding of the GI population size and distribution in Western Siem Pang.....	13
Outputs from Objective 2:	14
Outputs from Objective 3:	15
Section 3: Achievements and Impacts	16
Achievements	17
Impacts	17
Problems encountered and potential solutions.....	18
Future planned activities	18
Section 4: Appendices.....	19
Appendix 1	19
Appendix 2	20
GI Survey Protocol	20
Appendix 3	24

List of Figure

Figure 1: Translated version of poster produced for GI nest protection scheme at Western Siam Pang.....	6
Figure 2: Location of listening posts for GI during the field survey in June 2013.....	8
Figure 3: Project meeting on nest location activities with BirdLife staffs in WSP	9
Figure 4: Locating Giant Ibis nests in the field at WSP.....	9
Figure 5: Location of line transects and nest locations at Western Siem Pang	10
Figure 6: Team meeting with project advisor (Dr Neil Furey) on poster designs, nest location activities and onward planning	10
Figure 7: Project meeting with village chief and local communities.....	11
Figure 8: Building wooden frames for project awareness posters	11
Figure 9: A fruitful trip in constructing and installing the project poster	12
Figure 10: Group photo with local community.....	12
Figure 11: Constructing an anti-predator baffle on a Giant Ibis nest tree at night in WSP (to avoid disturbance to the nesting birds)	12
Figure 12: Giant Ibis nest built on an unsuitable small branch.....	13
Figure 13: One egg left in the nest and one chick felled down from the above unsuitable nest.....	13
Figure 14: Group photo and data record during field survey.....	14
Figure 15: Some key wildlife took during field survey	15
Figure 16: Presentation and group discussion during Giant Ibis workshop	16

Section1: Summary and Background

Summary

Giant Ibis's nest searching was conducted three times during the 2013 breeding season. Three nests were found and regularly monitored. Our results show that one nest succeeded with one chick fledging. Two nests failed, with one nest was abandoned and one failed with one chick falling from the nest and one egg remaining in the nest.

Anti-disturbance schemes were set up at five sensitive places where people always go into the forest. Along with schemes set up the team also held a village meeting to inform local authorities and people about the importance of conserving Giant Ibis as well as other wildlife and gave them chance to raise their concerns and share experiences linked with conservation. The meeting was attended by five village chiefs and ten local conservation groups from five villages, together with two commune chiefs and several local people.

A total of 49 trapaeng surveys were conducted three times to improve understanding of the Giant Ibis population in Western Siem Pang. We counted 22 birds in the first survey, 62 birds in the second and 33 birds in the third survey. Based on the survey counts we estimate that the minimum population of Giant Ibis in the study area is **62 individuals**. This is because the Giant Ibis is a resident species in Western Siem Pang. Therefore we provide a population estimate based on the largest survey count as all observed birds will be present all year round. So although some birds were not observed on the other two survey trips, we assume that these birds were also present, but not observed during the survey period. So our population estimate is based on knowledge of the species' ecology.

On the 30th of September our team had held a Giant Ibis workshop to disseminate the results of the CLP project which is participated by 26 key stakeholders from the Ministry of Environment (MoE), Forestry Administration (FA) and other INGOs. We had invited representative from WCS, WWF, PRCF and ACCB for presenting the Giant Ibis conservation status at each site. Besides sharing results and lessons learned between sites, the workshop had two main outputs: i) National Giant Ibis Working Group was established by assigning Ty Srun as coordinator. ii) Concise Giant Ibis species action plan was produced by assigning Ty Srun as plan manager.

Background

The Giant Ibis (GI, *Pseudibis gigantea*) is one of the rarest bird species in SE-Asia and is listed as critically endangered by the IUCN, with an estimated global population of about 250 individuals. Causes for its population decline are not known with certainty but habitat loss, disturbance and

hunting are believed the most likely factors. The breeding ecology of GI in Western Siem Pang (WSP), the global stronghold for the species, is also poorly known in terms of nest locations, numbers of nests, predation levels and breeding success. Further, the awareness of local people of the conservation importance of GI populations in WSP is very low. Our project aims to address these issues by locating nests, establishing a nest protection scheme, and improving awareness through posters, education materials and village meetings.

Section 2: Summary of Objectives, Activities and Outputs

Objective 1: To reduce direct threats (hunting and nest disturbance) through community based nest protection schemes.

Activity 1. Project inception meeting and develop work plan (May 27-28th, 2013)

Activity 2. Organize training for project team (project procedures, mapping, GIS, GPS, data collection) (May 29-30th, 2013)

Activity 3. Develop nest protection protocol based on White-shouldered Ibis nest protection protocols done by other projects (July 8-15th, 2013)

Activity 4. Produce nest reward and protection poster and training materials for village meeting and nest guard training (June and July, 2013)

Activity 5. Village meeting and workshop to inform all stakeholders about the project (nest reward scheme, nest protection protocol) (June and July, 2013)

Activity 6. Nest finding and guarding activities (June-October, 2013)

- Listening post surveys to gather the information on Giant Ibis occurrence and produce base maps for subsequent nest searches (June 1 – 12nd, 2013)
- The first Giant Ibis's nest search (June 15 - 26th, 2013)
- The second Giant Ibis's nest search (July 17 – 23th, 2013)
- Producing protection posters, and material for village meetings and nest tree baffles (August 4-8th, 2013)
- The nest reward scheme and searching by BirdLife staff continued until the breeding season finished (July-October, 2013)
- Nest protection activities (June-October, 2013)

Activity 7. Data entry and analysis (June 2013-May 2014)

Outputs from Objective 1:

1. On 27-28 May we held a project inception meeting to develop work plans and prepare material for team training. Work plans for each objective were developed and refined over the course of several team meetings and discussions with project advisors and partners.
2. We conducted team training for two days (29-30th May), the first day dealing with project procedures and how to use maps, GPS and data collection for field mapping. The second training day dealt with how to produce maps using ArcGIS, such as how to download UTM from GPS units, add these into ArcMap and how to use other tools and functions in ArcGIS. Most of the team members already had some knowledge of GPS, maps and GIS, but the training allowed us to exchange knowledge and experience within the team and ensure the team members could use these tools properly for the project.
3. To develop a nest protection protocol, we discussed with project advisors and a BirdLife technical advisor based in Siem Pang. As a result, we did not use nest guard methods but anti-predator devices with regular monitoring (twice a week). The reason for this choice was that nest guards were felt to likely cause more disturbance to the GI.
4. BirdLife International had already introduced and informed local people about a nest reward scheme. So we decided not repeat this nest reward scheme and instead developed a nest protection scheme (Fig. 1) with extensive input from project advisors and BirdLife staffs.



Figure 1: Translated version of poster produced for GI nest protection scheme at Western Siam Pang (Actual poster is all in Khmer language)

5. Two village meetings were held. The first was held in June and organized by BirdLife to inform local authorities and people about the nest reward scheme. The second was held in August to inform local authorities and local people about the nest protection scheme organized by Srun and the CLP project team.

6. Nest searches

- In June, Ty Srun (Team Leader) and Mem Mai (Team Member) conducted an initial survey using listening posts to gather information on the occurrence of Giant Ibis at WSP. The aim of the survey was to determine the occurrence of Giant Ibis locally and then produce a base map for subsequent nest searches. The survey was conducted at 12 sites (Fig. 2) with one day spent at each site to listen for Giant Ibis calls. Listening effort was conducted twice at each site, once in the evening (from 5 to 7 pm) and once each morning (from 5 to 7 am). Of the 12 survey sites, six were identified as having the most potential for locating nests due to Giant Ibis calls being heard from several directions, two sites were identified as secondarily important due to Giant Ibis calls being recorded from only one direction, while the other three sites were considered as having the least potential for subsequent nest searches. One actual nest was also located during the survey at site number two (S2) (Fig. 2).

The two trees used for nests were identified by local guides and the project team with reference to literature and the height and position of the nest on each tree was measured.



Figure 4: Locating Giant Ibis nests in the field at WSP



Figure 3: Project meeting on nest location activities with BirdLife staffs in WSP

- The second nest survey was conducted from 17-23 July and was led by Neab Samneang project officer from BirdLife International based at the study site and one of the project team (Mem Mai). During the second survey, the survey area was enlarged to include areas further to the west of local villages by selecting potential sites based on forest structure and previous records of occurrence, but unfortunately no further GI nests were found by the research team. The reasons could be because of the lack of baseline information about GI, and that during the searches GI might have ceased calling due to having already laid their eggs.

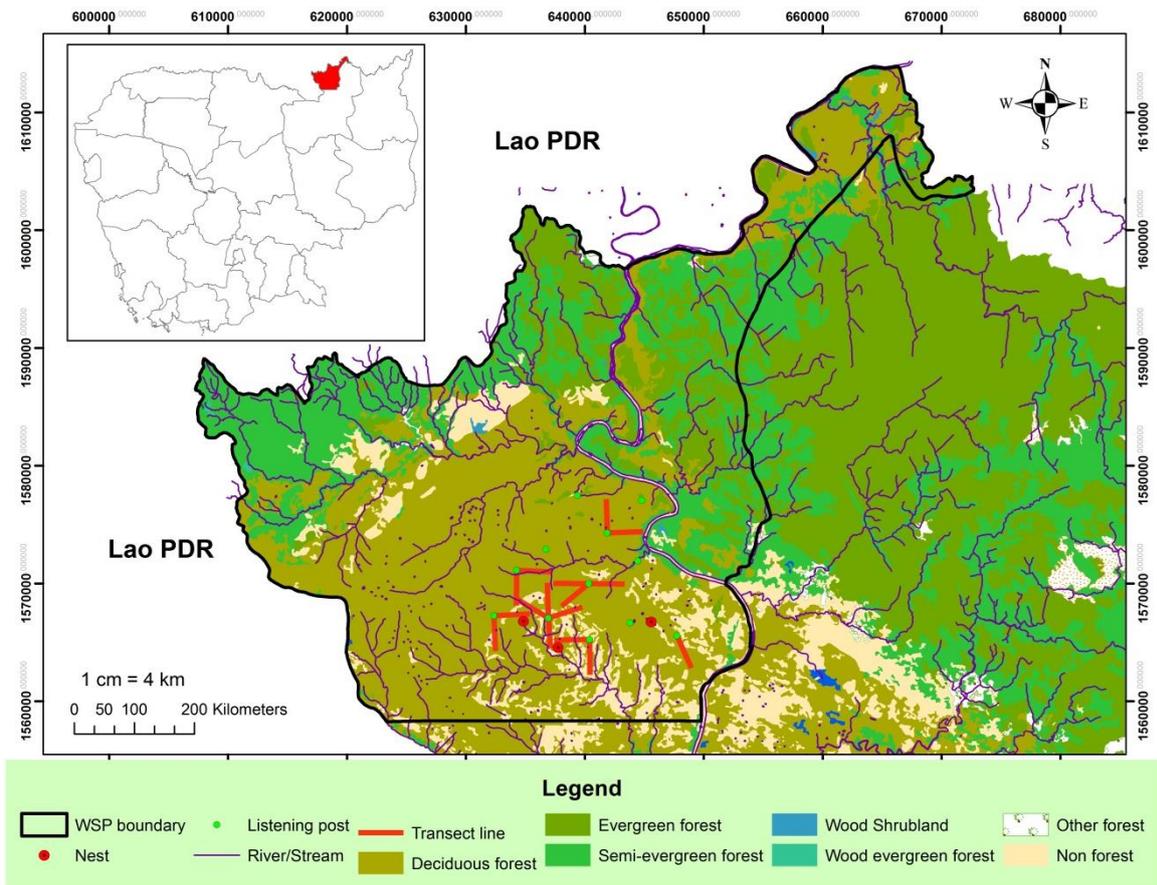


Figure 5: Location of line transects and nest locations at Western Siem Pang



Figure 6: Team meeting with project advisor (Dr Neil Furey) on poster designs, nest location activities and onward planning

- Nest protection scheme: As part of project plans to develop local awareness, the project team reviewed various images and design options for a poster to address problems threatening GI at Western Siam Pang. Several designs were created which were reviewed and commented upon by project advisors (Fig. 6) including Dr. Neil Furey from the Centre for Biodiversity Conservation, and Mr. Bou Vorsak, Mr. Sum Phearun and others from the BirdLife International Cambodia Programme. Simultaneously, the project team began constructing wooden signboards to display awareness posters (Fig. 7)
- Nest protection scheme: To initiate this activity, the project team visited WSP from 4-8 August and was accompanied by two university students from the Biology Department of the Royal University of Phnom Penh. The trip centered on a village meeting which was attended by five village chiefs and ten local conservation group form five villages, together with two commune chiefs and several local people (Fig. 8 & 9). The purpose of the meeting was to inform local authorities and people about the importance of conserving GI as well as other wildlife, to encourage them to avoid threatening activities and also to hear their experiences with the species and problems they face. All of the participants were pleased to share their experiences and suggestions, and were happy to join our activities and promised to help conserve GI as well as other local species.
- Immediately after the meeting, we also invited local authorities and people to help us erect the projects awareness signboards (Fig. 10). These were set up along main roads which local people frequently use to enter the forest and were mostly located at junctions. Over the course of two days, five awareness signboards were successfully erected at various key locations. Alongside construction of the signboards, Ty Srun also spent two nights in the forest to install anti-predator devices onto the trunks of nesting trees with BirdLife staffs (Fig. 11). The anti-predator devices were installed before dawn to prevent disturbing the birds.



Figure 8: Building wooden frames for project awareness posters



Figure 7: Project meeting with village chief and local communities



Figure 10: Group photo with local



Figure 9: A fruitful trip in constructing and installing the project poster



Figure 11: Constructing an anti-predator baffle on a Giant Ibis nest tree at night in WSP (to avoid disturbance to the nesting birds)

- The nest reward scheme and nest searching by BirdLife field staff were continued until the breeding season finished. But unfortunately no further nest were found and informed.
- After set up baffle on nesting trees, nest protection activities were applied by did regularly monitor the nests twice a week until the chicks successfully fledged and leaved the nest. As the results among the three nests found, one nest was abandoned, one nest was failed with one chick felled down from the nest and one egg left in the nest, one nest was succeeded with one chick fledged. For the nest abandoned we didn't know the reason why GI abandoned their nest but it was likely because there were highs disturbances occurred around the nesting tree. Anyway, the nest was built on a small branch of tree (Fig. 12), so the abandon may also because of the nest was built on an unsuitable branch. For the nest failed, one chick was fallen down from the nest and one egg was left in the nest. The

causation may be caused by strong wind because the nest was built on a small branch of tree. It also could be caused by disturbances, if there were high disturbances the bird would be got frighten and flushed away immediately and accidentally kicked the chicks down.



Figure 12: Giant Ibis nest built on an unsuitable small branch



Figure 13: One egg left in the nest and one chick felled down from the above unsuitable nest

Objective 2: To improve understanding of the GI population size and distribution in Western Siem Pang.

1. Desk study existing data and mapping (selected all trapaengs where GI presented from BirdLife's biodiversity survey database (Nov 2013))
2. Develop GI survey protocol (Aug 2013)
3. Consult with Ibis experts to finalize the GI survey protocol (Aug - Sep 2013)
4. Develop data sheet and purchasing research materials (Oct 2013)
5. Conducting field survey (January-Mar, 2014)
6. Data entry and analyses (March-May, 2014)

Outputs from Objective 2:

- Desk study existing data and mapping: All trapaeng located in Western Siem Pang stored in BirdLife database was used for sample sites selection. The total number of trapaengs in Western Siem Pang is 221 trapaengs, among these trapaengs there were about fifty trapaengs which is used to be visited or sighted GI from the year of 2008 to 2013. All trapangs used by GI from 2009 to 2013 were selected for GI survey. For details please see in the survey protocol attached in the appendices.
- Develop GI Survey Protocol: GI survey protocol was produced with widely comments by the project advisors, Dr. Neil Furey and Mr. Sum Phearun, Mr. Bou Vorsak and BirdLife technical advisor Mr. Daniel Willcox.
- Field survey had conducted three times, once per month from January to March started from the 20th to the 29th every month. A total of 49 trapaengs (waterholes) were surveyed each month. We counted 22 birds in the first survey, 62 birds in the second and 33 birds in the third survey.
- Based on above survey counts we estimate that the minimum population of Giant Ibis in the study area is **62 individuals**. This is because The GI is a resident species in Western Siem Pang. Therefore we provide a population estimate based on the largest survey count as all observed birds will be present all year round. So although some birds were not observed on the other two survey trips, we assume that these birds were also present, but not observed during the survey period. So our population estimate is based on knowledge of the species' ecology.



Figure 14: Group photo and data record during field survey



Figure 15: Some key wildlife took during field survey

Objective 3: To develop the conservation action plan and result dissemination through a final workshop.

1. Analyze and produce project output for workshop (report and presentations)
2. Invite all key stakeholders and partners
3. Develop and prepare workshop material and equipment
4. Lunch workshop to share project output with all stakeholders and discuss on conservation action plan for GI
5. Develop conservation action plan for GI and process of peer-review
6. Develop project technical report and process of peer-review
7. Result publication and dissemination to all stakeholders and donor

Outputs from Objective 3:

- All data from the field work were analyzed and prepared for workshop.
- Twenty nine key stakeholders from the Ministry of Environment (MoE), Forestry Administration (FA), Fauna and Flora International (FFI), Center for Biodiversity Conservation (CBC), Wildlife Conservation Society (WCS), World Wildlife Fund (WWF),

Save Cambodia Wildlife (SCW), Pannasastra University of Cambodia (PUC), International Union for Conservation of Nature (IUCN), Conservation International (CI), Samveasna Center for Wildlife Conservation (SCWC), Bird Club in Cambodia, staff of BirdLife in Cambodia (Jonathan Eames, Bou Vorsak, Robin Loveridge and Sum Phearun) and including five CLP project team members (Ty Srun, Yav Net, Hong Lina, Thi Sothearen and Mem Mai). But the actual total participants who had attending the workshop is only twenty six.

- Giant Ibis Consultancy Workshop was held on 30 of September, 2014. The workshop has four main objectives. 1) to disseminate the result from CLP project in Western Siem Pang IBA which was presented by Ty Srun (CLP team leader). 2) to sharing lesson learned between sites about GI conservation in Cambodia. We had invited Simon Mahood, Thong Sokha and Rours Vann from WCS to present about Giant Ibis conservation in Preah Vihea Protected Forest and in Kolen Promtep Wildlife Sanctuary, Sok Ko and Prum Sovanna (WWF) presented on Giant Ibis conservation in Mondul Kiri Protected Forest, Thou Veasna (PRCF) presented on Giant Ibis conservation in Lomphat Wildlife Sanctuary and Toby Bakos and Oliver Gray-Read (ACCB) presented about their activities related to Giant Ibis conservation. 3) to form GI working group in Cambodia. At the end of workshop a formal Giant Ibis Working Group was formed and assigned Ty Srun as the Giant Ibis Working Group leader which is responsible for coordinate Giant ibis Conservation in Cambodia. 4) to develop Giant Ibis species action plan. The workshop has widely discussed on Giant Ibis Conservation by come up with many potential problems and solutions. Through the workshop we got a draft of ideas for action plan development and the workshop also assigned Ty Srun as the plan manager responsible for action plan development and circulation and coordinating action plan implementations. We finally have got a concise Giant Ibis species action plan for conserving Giant Ibis in Cambodia. This should be the best outcome that we got from the CLP project in supporting and conserving our national symbol bird.



Figure 16: Presentation and group discussion during Giant Ibis workshop

Section 3: Achievements and Impacts

Achievements

- All team members clearly understand project procedures and especially the project approaches, field methods and how to use GPS and GIS.
- Nest finding protocol was produced.
- The nest protection protocol was finalized by putting anti-natural predator baffles and does regularly monitoring.
- Five villages related to resource uses in Western Siem Pang attended the project village meeting, including two commune chiefs. These were all informed about the nest protection scheme and the projects aims, works and also the important of conservation. Those who attended the meeting will share these experiences to people in their home villages.
- Three GI nests were found and anti-predator baffles to protect the nests were installed on the nest trees.
- Ten observers included BirdLife staff and CLP team member were trained in advanced on how to identify Giant Ibis, Giant Ibis age class, using compass, GPS, using data form and also survey technic.
- After the survey finished the highest number of Giant Ibis we have got is 62 individuals.
- Through the final workshop we had built a National Giant Ibis Working Group and produced a concise Giant Ibis Species Action Plan for long term conserving Giant Ibis in Cambodia.

Impacts

- CLP team member improve capacity in field research included using field research equipment such as compass and GPS.
- Local people understand about the important of conserving Giant Ibis as well as other wildlife animals and get involved in conservation.
- Nest searching protocol was used by BirdLife International Cambodia Programme in the year 2014 and found four Giant Ibis nest in July and could be increase in August. This verified that the method can apply in the future.
- We are the first team that tried to do Giant Ibis population estimation. So, if the method we used is effective and acceptable, it will be used by other organization in the future.
- We have formed GI working group to build a strong collaboration for conserving GI.
- We have produced a concise species action plan for long term conserving GI.

Problems encountered and potential solutions

Which project activities and outcomes have been problematic and in what way, and how has this been overcome?

- We could not find enough human resources to carry out the GI census as originally planned. We therefore changed the method a little bit from simultaneously counting at all trapaengs to dividing the trapaengs into five zones or groups and doing the census one zone at a time.

Please detail any problems that the project has encountered or deviations from original project plans. Describe how these problems were addressed and what solutions were found to deal with these issues (for example with project management or administration).

- We've got problems with the time involvement in the project team member Ty Srun, Yav Net, Hong Lina and Thi Sothearen due to we all were busy with research and writing thesis leading to late submission of the project report. We had asked Kiragu (CLP) for no-cost extension for to address this problem.

Please state important lessons which have been learnt through the course of the project so far.

- We have learned about financial management with advices from BirdLife staff, project management, field work technic, learned to collaborate with other NGOs as well as government agencies and team working.
- When we began the project, awareness and interest in the value of biodiversity was very low among project stakeholders. As the project progressed however, this gradually changed to them agreeing with our ideas and seeing the importance and need for conservation.
- We found that the support from local stakeholders and specialist advisors was critical to our capacity building and research work because our mentors helped us to avoid mistakes and built our knowledge, while our local stakeholders helped us to solve many logistical problems and understand far more about Western Siem Pang and its conservation issues.

Future planned activities

Now we are preparing journal article on the status of Giant Ibis conservation output for Cambodia Journal of Natural History (CJNH) and hope we can get it for publishing soon.

Section 4: Appendices

Appendix 1: Giant Ibis Nest Finding Protocol

1. Background

Giant Ibis is a very shy bird and very sensitive to the disturbances. Its nest is built on the big tree where there are fewer or no disturbances. Its rarest and its behavior make us very hard to find its nest location. GI call is very loudly especially during the mating time. GI generally frequently call two times per day, once in the morning (from 5:00 to 5:30 am) and once in the evening (from 6:00 to 6:30 pm) but in the morning is more frequently than in the evening. Using its calling may make us easier in finding its nest and roost.

2. Methods

Two methods listening post and belt line transect will be apply for GI nest find. Field work will be conducted 8 days from 6th to 13th June, 2014.

2.1 Listening Post

Listening post will be used to detect the location of GI occurrence and then observers follow the calling direction for finding nest location. Due to GI call most frequently in the morning so listening post will be conducted only in the morning start from 4:30 am. To cover larger observation area we can do many listening posts in one day by divide observers into groups with at least two observers for each listening post or each group. After heard its calling the two observers will follow the call direction to find its nest. To avoid nest or roost disturbing, observers will be stayed and observed the bird at a suitable distant from the nest or roost found.

2.2 Belt Line Transect

In case the birds call very far and stopped calling before the observers arrived at nesting trees, belt transect will be applied for continue nest finding. Observers will walk as belt transect with 100 meters apart from each other toward the previous heard calling direction. Anyway, if any listening post birds call come from many directions the remaining direction will conducted belt transect for nest finding start from the listening post because two observers can follow calling at only one direction.

2.3 Material

To assist in nest finding we need some materials such as:

- Binoculars
- GPS
- Compass

3. Training

Survey team need to be trained about the survey procedure and identify the calling of GI clearly. Also train how to use GPS, Binocular and compass for assisting nest finding.

Appendix 2: Giant Ibis Survey Protocol

Justification

As with many dry forest species, GI is widespread but in low densities, and relies on a habitats matrix including waterholes, grasslands, and undisturbed roosting and nesting sites. WSP contains significant suitable habitat (BirdLife, 2012), and GI is confirmed from the site, making it one of only a small number in northern and eastern Cambodia. However, the size and conservation status of the GI population is unknown. The study aims to improve understanding population size and distribution of GI in Western Siem Pang, which will help support the process of designation as a protected area, and provide FA with improved management information.

1. Background

Giant Ibis is the national bird of Cambodia and it has been considered as a “flagship species” in the region, along with White-shouldered Ibis. This nomination is expected to help increase public awareness and contribution in protecting biodiversity within the region. These flagship species also serve as health indicator of the forest habitats because it relies on a habitat matrix including waterholes, grasslands, and undisturbed roosting and nesting sites. Equally important, it is believed that they also function as “umbrella species.” If we could successfully protect these species, it means we have protected other wildlife, especially waterbird species occupying the same stretches of habitats. For these reasons, the conservation of Giant Ibis deserves exceptional endeavors.

Western Siem Pang (WSP) is considered as one of important bird area (IBA) classified by BirdLife International, supporting at least five critically endangered of waterbirds species. Currently research studied has proved that WSP is one of the most important habitat for White-shouldered Ibis in the world while information of Giant Ibis from the same ibis family still unclear.

Clearly scientific information about the species is needed to produce appropriate long term conservation action plan for conserving the species. Today, the information of Giant Ibis is still poorly known and the cause or causes of the population decline cannot be pinpointed with scientific certainty. The population status and its distribution are still not widely known both in Cambodia and Laos. If we want to effectively conserve the species; further scientific research should be conducted to update its population status and distribution, to investigate its breeding requirements (including breeding season foraging ecology), demography, seasonal movements and threats identification. Therefore, the aim of this survey is to improve understanding population size, distribution and key feeding sites of GI in Western Siem Pang.

Research Objectives

To improve understanding of the population size and distribution and key feeding sites of GI in Western Siem Pang.

2. Methods

Foraging sites base counting (bird counting at trapaengs) was used to estimate the population size of GI in Western Siem Pang.

2.1 Bird Census at Trapaeng

2.1.1 Trapaengs Selection

Trapaengs (forest pools) are one of the most important foraging habitats for GI and other waterbirds, especially during the dry season. To estimate the GI population, bird counting at foraging site base (trapaengs) was used. All trapaengs records of GI sighted from January to March between 2009 and 2013 stored in BirdLife's database were selected for the study. There are about forty nine trapaengs that have been recorded with GI sighted from January to March. These 49 trapaengs were used for GI counting (Table 1 & Fig. 1).

Table 1: Selected Trapaengs for GI Census

ID	T.Name	Co_X	Co_Y	Year
1	T.Boeung	645233	1567080	2010
2	T.Snor (1)	641549	1570430	2012
3	T.Chroung Touch	635050	1573200	2011
4	T.Thmear (1)	639623	1567643	2012
5	T.Thom	643167	1557731	2009
6	T.Khtum (1)	633248	1567820	2010
7	T.Krous	649018	1567750	2011
8	T.Boeung Kdouch	621821	1569191	2010
9	B.Nava	627698	1581192	2010
10	B.Kampha	631670	1581077	2010
11	B.Chrey	621353	1571256	2009
12	T.Chhouk	644409	1566521	2010
13	T.Anchagn Tanhorth	632745	1572659	2009
14	T.Bac Changoeur	640933	1575205	2011
15	T.Thlok	628285	1569402	2010

16	B.Mohasena	640309	1580467	2010
17	T.Robong	639287	1577696	2010
18	T.Lumtier	638227	1564905	2010
19	T.Phum Seng	629034	1559222	2010
20	T.Svay Chas	625640	1567721	2011
21	T.Anchagn Chha'eh	633455	1572962	2011
22	T.Pranor Prov	632493	1571837	2011
23	T.Nan Ghang	648977	1564302	2011
24	T.Tror Kourn	635869	1568448	2011
25	T.Chrong Thom	636749	1574432	2011
26	T.Sang Khor	626070	1564483	2011
27	T.Khmun	632986	1566984	2009
28	T.Tra Khlor	639220	1574493	2009
29	T.Socrom	630454	1572051	2012
30	T.Svay	646539	1565756	2012
31	T.Trach	634305	1567292	2012
32	T.Krawpur	639139	1564574	2009
33	T.Kaneik	633742	1573357	2011
34	T.Rolum Thmor	636458	1562525	2010
35	Veal Kriel	631755	1567949	2012
36	T.Sampau	637298	1572037	2011
37	T.Kbal Krabey	636292	1574642	2008
38	T.Karkoh 1	626825	1567707	2008
39	T.Nhor 1	645646	1566717	2010
40	T.Snaor 2	623400	1568601	2010
41	T.Pumsaeng Toych	640101	1577398	2010
42	T.Peam Trach	630962	1576114	2009
43	T.Sre Trach	629250	1575238	2013
44	T.Tuol	639755	1573481	2012
45	T.Prey Chas Krabey	632514	1578885	2012
46	T.Tmear Sa-oy	625531	1565472	2011
47	T.Na Klor	642253	1575272	2010
48	T.Tamai	632945	1578257	2010
49	T.Koul	630733	1574994	2010

3.1.2 Bird Counting Strategies

The field work was conducted from January to March, 2014 with once time a month started on the 20th of each month. Due to the territory defend, GI generally occupied a few trapaengs and not move too far from the foraging sites. To avoid GI move from one zone to another all trapaengs selected were classified into zones or groups based on the distances between those trapaengs. The trapaengs located less than 3 Km apart from one another were put into the same group or zone. All trapaengs located within one zone were survey in the same day and time so that have no double counting bird within in each zone. The surveys were conducted only in the morning time and started from 5: 30 to 8:00 am at all sites (trapaengs). All bird sighted and/or heard will be recorded, including any that are flushed on approach to trapeangs. To assist in data analysis the time and distances of sighting birds, fly in direction and time, fly out direction and time, time and distances of calling birds were carefully recorded. To avoid disturbance observers require to calmly walking at least 500 meters toward trapaengs. To ensure they can manage to get at survey sites on time observers were slept in groups in the forest near to the sites during each survey.

3. Training

Training will be conducted on December 27, 2013. The training focus on five main points:

- 1) How to use map and GPS to assist in finding trapaengs during census
- 2) Survey procedure and methods
- 3) How to use data forms and record data
- 4) How to identify GI calls
- 5) How to use compass for finding direction and measuring angle assisting in listening post data record

Note: - All sections will be linked with practices.

- Materials (Maps, GPS, Compass, Survey Forms and GI Calls).

Giant Ibis - *Thaumatibis gigantea*

Appendix 3: Giant Ibis Species Action Plan

Giant Ibis (*Thaumatibis gigantea*)

Distribution and population

Thaumatibis gigantea is mostly confined to northern **Cambodia**, where it is probably still fairly widespread but extremely rare; with a few birds from the same population observed in extreme southern **Laos** (BirdLife International 2001). There is a fairly recent record from Yok Don National Park, **Vietnam** (Anon 2003). Its historical range spanned southern Vietnam and south-eastern and peninsular Thailand, where it is now extinct. Available data suggest that it has a patchy distribution across Cambodia (T. Clements *et al. in litt.* 2007). Some areas of high density exist in the Northern Plains, including Preah Vihear Protected Forest and Kulen Promtep Wildlife Sanctuary (with 30-40 nests monitored annually [T. Evans *in litt.* 2012) and Western Siem Pang IBA (possibly 40 pairs [H. Wright *in litt.* 2012]). Other areas appear to have relatively low density populations, which may be clustered in some cases (Lomphat Wildlife Sanctuary, Seima Protection Forest [Bird *et al.* 2007, WCS/FA 2006], Mondulkiri Protected Forest [T. Gray *in litt.* per T. Evans] and Phnom Prich Wildlife Sanctuary [Claassen and Ou 2007]) (T. Clements *et al. in litt.* 2007, T. Clements *et al. in prep.*).

Ecology

Singles, pairs or small parties occur in marshes, pools, wide rivers and seasonal water-meadows in open, predominantly deciduous, dipterocarp lowland forest, although it seems to be dependent on soft mud around seasonal pools (trapaengs). Its diet comprises a variety of invertebrates, crustaceans, eels, small amphibians and reptiles. It frequently feeds in soft mud, but forages on all substrates at trapaengs. It nests in trees, with a preference for large *Dipterocarpus* (Keo 2008), generally more than 4 km from human habitation (Keo 2008).

Trend and population

The Giant ibis has an extremely small population, which has undergone an extremely rapid decline as a result of hunting, disturbance and lowland deforestation. It is likely to continue to decline extremely rapidly owing to on-going deforestation and human disturbance. It therefore qualifies as Critically Endangered. A minimum population estimate is 230 mature individuals, and roughly 345 individuals in total.

Conservation challenges

It has declined as a result of hunting, wetland drainage for agriculture and deforestation. It relies on seasonal pools, which in the past were perhaps maintained by the now much depleted megafauna. There is a lack of precise information on population estimates for the different sites where Giant Ibis is known to occur and this impedes prioritisation of conservation effort.

Conservation action

Targeted species conservation actions to date have included the development and use of baffles on Giant Ibis nest trees to protect against predation of eggs. This has been used in Preah Vihear Protected Forest and trialling in Western Siem Pang. WWF in Mondulkiri Protected Forest also use

Giant Ibis - *Thaumatibis gigantea*

nest guardians. BirdLife, WCS and WWF are undertaking these targeted interventions in connection with wider sustainable habitat management and law enforcement initiatives.

1 STATUS AND POPULATION TRENDS (link to BirdLife factsheet – click [here](#))

IUCN status	Critically Endangered
Global population and trend	230 mature individuals, decreasing
Key delivery mechanisms	
Predicted impact of climate space shift	Unknown (no BirdLife climate map available)
Species Guardian	
Species Champion	
Flagship?¹	National Bird of Cambodia

<i>Image copyright</i>	<i>Giant Ibis range map (BirdLife International)</i>
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2 ISSUES AFFECTING RECOVERY

2a Current threats to conservation status

Threat	Threat rank	Scope²	Severity³	Proven impact / Assumed / Future threat
Habitat conversion (large-scale Economic Land Concessions)	1	Most	Rapid	Proven
Habitat loss- logging	2	Most	Rapid	Proven
Indirect disturbance e.g. human activity in surrounding landscape	3	Most	Rapid	Proven
Habitat degradation (ecological succession) through absence of grazing, and particularly wallowing ungulates that naturally maintain trapeangs (buffalo, elephant, wild pig, Eld’s deer)	4	All of population	Moderate	Proven
Habitat conversion: small scale	5	Most	Moderate	Proven

¹ Flagship: Detail whether or not the species is a flagship for a group or a particular habitat.

² Scope: **all** (>90% of population) **most** (50-90%), **some** (10-50%), **few** (<10%).

³ Severity (on part of population affected): **rapid** (rapid deterioration, >30% over 10 years or 3 generations), **moderate** (10-30%), **slow** (1-10%), **none** (<1%).

Giant Ibis - *Thaumatibis gigantea*

agricultural expansion				
Poor scientific understanding of range, population and trend	6	most/all of population/some	Moderate	
Human fishing in trapeangs and removal Giant Ibis food source	7	Most	Moderate	Assumed
Hunting of adult GI	8	Some	Moderate	Assumed
Poisoning of trapeangs	9	Some	Moderate/slow	Proven
Habitat loss due to a planned future hydrodam development	10	Few	Potentially Rapid	Future
Human collection of eggs and chicks	11	Some	Slow	Proven
Natural predator (snake, crow, lizard and civet)	12	Some	Slow	Proven
Drying trapeangs in dry season & absence of suitable habitat (Climate Change)	13	All of population	Slow	Assumed / Future
Genetic isolation	14	All of population	Slow	Assumed/ Future
Natural disasters (heavy rain and wind causing chicks to fall from the nest)	15	All of population	Slow	Proven
Pesticide use affecting viability of eggs	16	Presence unknown	Slow	Hypothetical

2b Constraints to delivery of conservation action

	Constraints	Solution
1	Data deficiency on population status, distribution and trend	Coordinated national survey and priority exploratory surveys should be conducted: Mondulkiri PF, Lomphat WS, and other sites with suitable habitat but thus far unconfirmed populations of Giant Ibis
2	Corruption: disengaged law enforcement teams and governing institutions	Strengthening of governing institutions through intensive site based support
3	Poor awareness among local communities of the impacts their daily activities are having on Giant Ibis populations	Undertake awareness raising campaigns to increase engagement of local communities in Giant Ibis conservation

3 TARGETS FOR RECOVERY (targets must be SMART – Specific, Measurable, Achievable, Realistic and Time bound);

Aim

By 2024, a stable and increasing population of Giant Ibis inhabits a network of well-protected sites.

Objectives

1. Increase the size of the Giant Ibis population breeding within protected areas (National Parks, Wildlife Sanctuaries and Protected Forests).

Giant Ibis - *Thaumatibis gigantea*

2. Promote innovative solutions to site management within and beyond the formal protected areas system.
3. To more completely understand the range and population size and trend of the Giant Ibis.

Outcomes

1. All protected areas within the range of Giant Ibis are managed appropriately.
2. Important sites outside the formal protected areas system are managed appropriately.
3. Conservation research and monitoring of the species informs species management.

Organisation specific targets

Birdlife:

- (Lomphat) By 2018 population census will be understood and key habitat will be identify and sustainable management.
- (Siem Pang) By 2018 new conservation concession will be granted for GI and other critically endangered wildlife species conservation.

Lomphat Wildlife Sanctuary (LWS) Short term 3 years

- a) Population status of GI will be known and protected.
- b) Ally key habitat will be identify and protected.
- c) Local community awareness on GI conservation has been improved.
- d) At least 5 nests will be found and protected in the next three years.
- e) Base-line population of GI in LWS will be identified.

Lomphat Wildlife Sanctuary (LWS) Long term 10 years

- a) The sub-population of GI at LWS will be stable or increasing.
- b) At least 15 nest of GI will be found and protected in the next 10 years in LWS.

WWF:

- By 2020 a new protected area will be established in the central Mekong that includes verified records of Giant Ibis occupancy.
- Mondulkiri Protected Forest core zone & PA with effective law enforcement and a population of 50 GI

WCS:

- PVPF and KPWS double the amount of foraging habitat for GI by 2020.
- In PVPF and KPWS find at about 30 nests of GI by 2020.

ACCB:

- By 2016 80% of rangers from FA base in the area where GI occur get training in effective patrolling (patrol hunting and illegal logging).
- Identify at least one new breeding or forage habitat of GI by 2016.

MoE:

Giant Ibis - *Thaumatibis gigantea*

- By 2024 all habitat sites of GI under the management of MoE will be restored or Sustainably managed.

4 KEY PARTNERS

- Forestry Administration
- Ministry of Environment
- BirdLife International Cambodia Programme
- Wildlife Conservation Society Cambodia
- World Wildlife Fund Cambodia
- Angkor Center for Conservation of Biodiversity (ACCB)
- PRCF
- Fauna and Flora International
- Center for Biodiversity Conservation (CBC)
- Sam Veasna Center for Wildlife Conservation

5 KEY PUBLICATIONS

An Dara. 2008. Agricultural expansion and its effects on breeding habitat of Giant Ibis *Pseudibis gigantea* in Kulen Promtep Wildlife Sanctuary, northern Cambodia. MSc Thesis, Tokyo University of Agriculture and Technology, Department of International Environmental and Agricultural Science.

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BirdLife International. 2001. *Threatened birds of Asia: the BirdLife International Red Data Book*. BirdLife International, Cambridge, U.K.

Claassen, A. H.; Ou, R. 2007. *A stream and wetland survey of southwestern Phnom Prich Wildlife Sanctuary and adjacent areas, with a focus on large waterbirds*. WWF Greater Mekong, Cambodia Country Programme., Phnom Penh.

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Keo, O.; Collar, N. J.; Sutherland, W. J. 2009. Nest protectors provide a cost-effective means of increasing breeding success in Giant Ibis *Thaumatibis gigantea*. *Bird Conservation International* 19(1): 77-82.

WCS/FA. 2006. *Threatened Species of the Seima Biodiversity Conservation Area*. Wildlife Conservation Society - Cambodia Program, and Forestry Administration., Phnom Penh, Cambodia.

Giant Ibis - *Thaumatibis gigantea*

6 ACTIONS TOWARDS RECOVERY

<u>Action</u> (including specific threat that this action intends to meet)	<u>Priority</u> ⁴	<u>Timing</u> ⁵	<u>Constraints and comments</u>	<u>Additional Funds required?</u> Y/N	<u>Potential funding sources</u>	<u>Progress in 2014</u>
(Threat 2) Capacity building: local authority, training in forest law	High	Now				
Awareness raising in communities	High	Now	Potential to share awareness raising resources between organisations			
(2, 8, 9) Improve law enforcement	High	Now	Expensive			Currently being undertaken by BirdLife, WCS, WWF
(4) Encourage local community to raise buffalo - Research to understanding why they sell the buffalo -Purchase of buffalo	High	Now	Commercial not our area of expertise Expensive			
Zoning- conditional use agreements, development of site specific management plans	High	Now				
Building basic scientific knowledge, rang, population and trend -Priority: survey Mondulkiri -Priority: survey Lomphat	High					
Standardising methodology for Census	High					

⁴ Priority: **essential** (recovery highly unlikely without this action – only one in the research/monitoring section), **high** (action required in short-term for recovery; rank 1, 2 etc within each section), **medium** (action required in long-term for recovery), **low** (action useful, but recovery can continue without it).

⁵ Timing: **now** (happening/required now), **short** (within the next 4 years), **long** (beyond 4 years); add the duration in brackets, for example: now (2 yrs).

Giant Ibis - *Thaumatibis gigantea*

Promote investment from private sector in conservation	High	Now	Potential to attract people			
Nest protection baffles	High	Now	Site specific			
Develop a reference directory of sites containing GI (advocacy tool)	Medium	Long				Partially achieved through species information and IBA occurrence data in birdlife datazone?
Creation of new protected areas	Medium	Now-long term	Political will			WWF submitting application for new PF
(4, 12) Deepening trapeangs	Potential to explore	WWF-Now				
(3, 4, 7) Make new trapeangs	Questionable					
Campaign against a planned dam development	WWF- High	Now				
(3,8,9) Livelihood improvement: livestock (rewarding consideration friendly behaviour)			Complex, biodiversity goal should be clearly identified			