

Research Reports
ISSN 2202-7432

**PROVIDING INCENTIVES FOR BIODIVERSITY
PROTECTION: ANTI-POACHING PATROLLING IN
THE GREEN PEAFOWL SPECIES CONSERVATION
ZONE OF THE PHOU KHAO KHOUAY NATIONAL
PROTECTED AREA**

Research Report No. 10

August 2016

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The project 'Effective Implementation of Payments for Environmental Services in Lao PDR' is funded by the Australian Centre for International Agricultural Research (ACIAR). The reports produced within this project are published by the Crawford School of Public Policy, Australian National University, Canberra, 0200 Australia.

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Table of Content

1.	Introduction.....	3
2.	Overall design.....	4
3.	Anti-poaching patrol teams.....	5
4.	Organisation of anti-poaching patrol effort	5
5.	Anti-poaching patrol tasks	6
6.	Anti-poaching patrol equipment	9
7.	Financial benefits of anti-poaching patrolling	10
8.	Other benefits of anti-poaching patrolling	10
9.	Penalties for breaching patrol contracts.....	11
10.	Benefits to communities.....	12
	Acknowledgments	14

1. Introduction

This research report outlines the anti-poaching patrol scheme developed for application within the Green Peafowl Species Conservation Zone (GPSCZ) of the Phou Khao Khaouy National Protected Area. It is part of the pilot Payments for Environmental Services (PES) scheme focussing on Green Peafowl protection. Under the scheme, poor rural communities will be paid for performing Green Peafowl protection and monitoring actions. The core of the patrol scheme design is based on a design applied in the Nakai-Nam Theun National Protected Area¹ but was customized to the specific PES context.

This report draws on Research Report 3: Development of a ‘virtual’ PES scheme for the Nam Ngum River Basin (Scheufele et al. 2014), Research Report 5: The environmental, economic and social conditions of the Nam Mouane – Nam Gnouang catchment (Tsechalicha et al. 2014), Research Report 8: Phou Chomvoy Provincial Protected Area: a biodiversity baseline assessment (Vongkhamheng 2015). The report feeds into Research Report 16: Costing biodiversity protection: Payments for Environmental Services schemes in Lao PDR (Scheufele and Bennett 2017).

¹ The design applied in the Nakai-Nam Theun National Protected Area was developed by C. Vongkhamheng.

2. Overall design

- The Green Peafowl Species Conservation Zone (GPSCZ) covers about 80km².
- The main threats to the Green Peafowl are poaching, egg collection and habitat disturbance.
- Patrol units will be employed to protect the remaining population of Green Peafowl. Patrol units will perform regular patrols within and along the boundary of the Species Conservation Zone. The patrol units will focus on popular entry points and access routes as well as on sensitive areas such as breeding and feeding zones.
- The GPSCZ will be divided into 1km² grid cells using 1:50,000 topographic maps; each cell marked by a centre point (GPS reference). The use of 1:25,000 topographic maps might be required to assess the accessibility of grid cell centre points.
- Grid cells that are expected to be inaccessible to patrol units will be ignored. However, poachers may often have strong incentives to access the most difficult terrain.
- Patrol units will be instructed to visit a series of assigned grid cells following specified patterns (e.g. visiting the centre points, following a zig-zag line, following the GPSCZ boundary, being positioned for a specified time period at a certain entry point). Grid cells will cover both the GPSCZ and its boundaries and will focus on sensitive habitat such as breeding areas, popular entry points to the GPSCZ, and access routes within the GPSCZ. The patrols would be targeted at intercepting visitors/ users of the GPSCZ in general to deliver information and cautions (see 24).
- The grid cell series and the grid cells would be randomised across patrol teams and time. This would enable the patrol manager to respond to emerging threats hot spots, to minimise predictability to poachers, and to enable effective Green Peafowl and poaching monitoring.
- Evidence must be provided to prove that the whole patrol unit has visited the assigned grid cells in the specified pattern (recorded GPS ‘waypoints’; track logs; photographs of team members with date, time and location stamps of the patrol team at the start, midday and end of each patrol day).
- Incentives are designed using the ‘costly to fake’ principle –the costs of forging evidence are more costly than the benefits that could be gained from forging.

- The participating communities will be involved in the scheme through community conservation agreements. Villagers are incentivised through payments to their village developments funds to support the patrols and agree to refrain from performing actions that damages Green Peafowls (and other protected species) within the GPSCZ.
- This approach is expected to increase the probability that the patrol targets will be achieved, to provide reliable records of patrol effort, and to reduce the risk of teams deliberately ignoring poaching.

3. Anti-poaching patrol teams

- Villagers and village militia will form patrol teams of up to six people. Each patrol team will assemble patrol units that consist of two villagers and one village militia. At least two members of each patrol unit will have to be able to read and write.
- All patrol team members will be trained on patrol techniques and use of the equipment necessary to record field data, such as GPS units/ apps, maps, and patrol data form.
- Successfully completing the patrol training will be a condition in the PES contracts.
- One member of each patrol unit acts as patrol team leader. Patrol unit leaders will be identified during the patrol training.
- Patrol teams will be officially assigned by the district governor.
- Each team will have to sign a patrol contract, which will also be signed by the village authority (village head); and endorsed by all agencies involved in the PES scheme. The patrol contract will include, among other things, a clear definition of roles and responsibilities of all contract partners.

4. Organisation of anti-poaching patrol effort

- The patrols will be planned by the patrol manager using hardcopy topographic maps and free software such as SMART. The feasibility of additionally using the smart-phone incident reporting app developed by the Department of Forestry Inspection (DOFI) will be assessed by the patrol manager.

- Hard-copy maps will be used for tactical planning (threat and wildlife monitoring; enforcement activities).
- Equipment such as GPS units, map, camera, and patrol data form will be assigned to each patrol team to record field data.
- The free SMART software will be used to manage the spatial patrol data obtained by patrols, including timing and locations of patrols, location of snare lines, wildlife encounters, poaching incidents, poacher encounters, etc.
- A patrol manager will manage and analyse the conservation data and will use the results to plan the location and timing of the patrols.
- A patrol is defined in terms of three days of continuous patrolling, where a day of patrolling is defined in terms of patrol effort (number of grid cells visited by a patrol team).
- The number of grid cells that constitute one day will vary to account for differences in effort (seasons, terrain, etc.). For example, two to three grid cells per day in the wet season, compared to three to four in the dry season. More cells in flatter terrain and less cells in steeper terrain.
- ‘Core zones’ of high priority will be identified by the scheme manager (assessment of risk that identifies ‘hot-spots’; identification of natural corridors, breeding sites, and entry/exit points). These ‘core zones’ will be subject to the most intense patrolling. The incorporation of a ‘random’ element into the patrol schedule will ensure that other areas are visited and changes to criminal activities are detected. Knowledge of and access to patrol data will be restricted by the patrol manager.
- The PCPPA will be treated as one area under the ‘communal management’ of all participating villages, guided by the patrol manager.

5. Anti-poaching patrol tasks

The patrol units will undertake the following tasks while patrolling:

- Provision of information. The patrol units will inform people who enter the Green Peafowl Species Conservation Zone about the Green Peafowl (and other endangered wildlife), the

importance to protect it, and what uses are allowed and prohibited (for example, hunting the Green Peafowl, collecting Green Peafowl eggs, burning of vegetation, access restrictions to core habitat during the breeding season).

- Recording poaching incidents and evidence. The patrol units will take notes and photographs of encountered poaching incidents and evidence with a photo stamp showing the GPS location and date and time of the encounter.
- Reporting encountered poachers. The patrol units will record conversations with poachers, request signed statements of poachers, and alert the patrol manager, the Provincial Division of Forestry Inspection (through SPIRIT) and the Provincial Agricultural and Forestry Office.
- Confiscating illegal gear (guns, rifles) used for poaching Green Peafowls and other protected wildlife, and removing snares if any. In case of risk of violent clashes, on-spot confiscation of guns and rifles is not recommended other than taking the evidence and reporting it to the police. The patrol units will take photographs of confiscated gear, snares if any, and the poacher(s) with a photo stamp showing the GPS location and date and time of the confiscation. The patrol units will ask poachers to sign a confiscation form, which the patrol units will also sign. The patrol units will hand over confiscated poaching gear to the police.
- Confiscation of Green Peafowls and other protected wildlife, wildlife parts such as feathers, and release Green Peafowls and other protected animals that are alive. In case of risk of violent clashes, on-spot confiscation of animals and animal parts is not recommended other than taking the evidence and reporting it to the police. The patrol units will take photographs of confiscated Green Peafowls and other protected wildlife and wildlife parts and the poacher(s) with a photo stamp showing the GPS location and date and time of confiscation. The patrol units will ask poachers to sign a confiscation form, which the patrol units will also sign.
- Issuing of warnings to local poachers. The patrol units will issue an official warning using warning forms that need to be signed by the local poachers. The patrol units will record relevant information.
- Apprehending poachers who are not Lao PDR citizen. In case of risk of violent clashes, apprehending poachers is not recommended other than taking the evidence and reporting it to the police. The patrol units will turnover apprehended poachers to the police and alert

the Provincial Office of Forestry Inspection (through SPIRIT) as well as the Provincial Agricultural and Forestry Office.

- Recording of any direct sightings of Green Peafowls as specified by the patrol manager. The patrol units will record information on the number of Green Peafowls as well as the GPS location and date and time of sightings using a data form.
- Record of any indirect signs (e.g., tracks, feathers, nests, scat) and calls of Green Peafowls every 300 meters. The patrol units will record information on the GPS location and date and time of signs using a data form.
- Fire management. Patrol units who encounter fires or fire risks will alert the Ban Xang Village cluster administration and local office of the Phou Khao Khouay-Phou Phanang NPA Management Division immediately.
- In any circumstance where a violent confrontation is likely, the patrol units should withdraw from immediate engagement.
- The patrol units will comply with the Environmental Code of Conduct. The environmental code of conduct will ensure that patrolling in the GPSCZ will neither damage wildlife nor their habitat. The Environmental Code of Conduct consists of the following rules:
 - a. The patrol units are not allowed to hunt any wildlife for food during an anti-poaching patrolling.
 - b. The patrol units will minimise disturbance of wildlife.
 - c. The patrol units will not make camp in ecologically fragile areas and will minimize the cutting of vegetation and site clearing.
 - d. The patrol units will dismantle their camps and putting off their cooking fire completely before continuing the patrol.
 - e. The patrol units will extinguish their cigarette stubs completely.
 - f. The patrol units will carry out any garbage (including cigarette stubs) and not discard it within the GPSCZ.
 - g. The patrol units are expected to be a role model for the wider community. Breaching the Community Conservation Agreement by any member of the patrol team during anti-poaching patrolling or off-duty will be treated as a violation of this Environmental Code of Conduct.

- The patrol units will comply with the Physical and Cultural Resources Chance-Find Procedure. Chance-Find Procedures have been developed to mitigate against damage or loss to Physical and Cultural Resources. Chance-Find Procedures relevant to the patrol units include the following:
 - a. The patrol units will not move or interfere with a suspected Chance-Find.
 - b. The patrol units will immediately report a suspected Chance-Find to the village head and a representative of the District Agricultural and Forestry Office.

6. Anti-poaching patrol equipment

- Provision. The patrol units will receive the following list of equipment required to fulfil the patrol commitments. The first set of equipment provided will remain the property of the National University of Laos: 1 GPS unit with in-build camera, maps, 1 compass, 1 pair of binoculars, 1 paper notebook and record sheets, 3 backpacks, 3 flysheets, 3 hammocks, 1 first aid kit, and mosquito repellent. The second set of equipment provided will become the property of the patrol team: up to 6 pairs of anti-leech socks, up to 6 hats, field clothing (pants and shirt marked as ‘village patrol’) for up to 6 people, and up to 6 pairs of boots.
- Malfunction. Malfunctioning equipment will be repaired or replaced if necessary by the patrol manager.
- Loss. A sliding penalty for each equipment category will be applied to the patrol team for the replacement of lost or damaged (caused by users beyond expected wear and tear) items of equipment that is the property of National University of Laos. After the first loss, without a valid reason or due to user’s fault, 25% of replacement costs will be paid by the patrol team (taken out of the patrol team’s payments). After the second loss, 50% of replacement costs will be paid by the patrol team (taken out of the patrol team’s payments). After the third and any further loss, 100% of replacement costs will be paid by the patrol team (taken out of the patrol team’s payments). Lost equipment that became property of the patrol team will be replaced by the patrol team members.

7. Financial benefits of anti-poaching patrolling

- Price per patrol. The patrol teams will be paid per completed patrol. A patrol is recognised as completed if the patrol team provides full and valid evidence that the assigned series of grid cells was visited and the assigned tasks were fulfilled. Evidence that needs to be presented to the patrol manager consists of recorded GPS coordinates as well as of photographs of team members a photo stamp showing the GPS location and date and time of the patrol team at the start, middle and end of each patrol day. Patrol teams get paid in full if they complete their tasks within the two day patrol period.
- Payment schedule and transfer. An advance of 30% on the first regular payment will be paid to the patrol teams immediately after signing this patrol contract. Subsequent payments to the Patrol Team will be made every three months. The patrol manager will calculate the payments every three months on the performance of the patrol teams and will then send a payment request to the Faculty of Economics and Business Management at the National University of Laos (FEBM-NUoL). The patrol teams are encouraged to calculate their own payments to cross-check the calculations made by the patrol manager. The FEBM-NUoL will transfer the requested amount to the patrol manager. The patrol manager will make cash payments to each patrol team. All patrol team members have to sign a receipt upon receiving the cash payment.

8. Other benefits of anti-poaching patrolling

- Each patrol team member will be recognized as a ‘Trusted Wildlife Guardian’ if their team has fulfilled all its commitments and made exemplarily efforts over the course of one year. Each patrol team member will receive a certificate and a badge for their field clothing presented to them by a government official.
- Patrol teams will receive health and accident insurance that covers their patrolling activities.
- Patrol teams may also be eligible for rewards form the Government of Lao PDR for activities that support wildlife law enforcement This Patrol Contract does not preclude the Patrol Teams from negotiating such rewards with the relevant government authorities.

- Patrol teams or any patrol team member have the right to solve any grievance directly with the patrol manager. Patrol teams or any patrol team member also have the right to file a complaint using the mechanism for grievance, conflict resolution and redress without having first attempted to resolve the dispute directly with the patrol manager. The use of this mechanism is free of charge.

9. Penalties for breaching patrol contracts

- The patrol teams will only be paid for completed patrols. If the patrol teams did not provide the full set of evidence relating to its patrol activity it will not be paid for the patrol.
- If patrols are not conducted by a patrol unit consisting of two villagers and one member of the village militia, patrol teams do not get paid.
- If the patrol teams do not complete the number of patrols scheduled by the patrol manager within a three month period, the three-monthly payment (calculated as the number of completed patrols times the price per patrol) will be reduced by 20%.
- The payment per patrol is the sum of every patrol unit members' portion. Patrol unit members who don't complete the patrol will not be paid their portion. That is, the patrol unit and hence patrol team payment will be reduced accordingly.
- In case a patrol unit member gets sick during patrolling and needs to be walked out by a fellow patrol unit member, the patrol unit and hence the patrol team will be paid in full for that patrol if the following condition is met: The sick patrol unit member can provide proof of illness (consisting of a testimonial from the Team Leader and a certificate from the village head or a health post/hospital) and if the rest of the team fulfils the missing patrol team members' tasks.
- If valid proof is not presented and/or the remaining patrol team members do not fulfil the missing patrol unit members' tasks, the patrol unit and hence the patrol team payment will be reduced to the portions of the remaining number of patrol unit members who patrolled and the days they patrolled.
- If a patrol team member breaches the Environmental Code of Conduct the following penalties will apply:

- a. First transgression: The patrol team member will be given a verbal warning by the patrol manager and the village head.
 - b. Second transgression: The patrol team member will have to sign a breaching memo issued by the village administration and the patrol team's next payment will be reduced by 50% of the patrol team member's portion. The patrol team member's portion will be calculated as the number of patrols the patrol team member performed within the current 3-month payment period multiplied by a third of the price per patrol.
 - c. Third transgression: The patrol team's next payment will be reduced by 100% of the patrol team member's portion. The patrol team member's portion will be calculated as the number of patrols the patrol team member performed within the current 3-month payment period multiplied by a third of the price per patrol.
 - d. Any further transgression: The patrol team member will be excluded from the patrol team for the rest of the contract duration.
- Additionally, the Lao legislation stipulates penalties for wildlife crimes.

10. Benefits to communities

- A fixed amount per household that will be paid yearly into the communities' village funds.
- A variable amount paid every three months that will be equal to a certain percentage of the payments to the patrol teams of each community.
- If communities have honoured their commitments over the course of one year the community will be recognized as a 'trusted wildlife guardian'. The village will receive a certificate presented to them by a high ranking GoL official.
- Communities may also be eligible for rewards from the Government of Lao PDR for activities that support wildlife law enforcement.
- Community members who breach the community commitments will be penalised.
- The penalties were developed in consultation with the village development committee during the development of the community conservation agreement.
- The penalties include the following:
 - a. First transgression: The community member's household will get a verbal warning.

- b. Second transgression: The community member's household will have to sign a breaching memo issued by the village administration and any individual benefits the community member's household will get from the village development fund will be reduced by 50% for three months.
 - c. Any further transgression: The community member's household will be excluded for nine months from any individual benefits from the village development fund.
- Additionally, Lao legislation stipulates penalties for wildlife crimes.

Acknowledgments

We acknowledge staff of the Environmental Protection Fund (EPF), the Provincial Agricultural and Forestry Office (PAFO), the District Agricultural and Forestry Office (DAFO), the World Wildlife Fund (WWF), and Luxembourg Agency for Development Cooperation (LuxDev) for valuable comments and exchange of ideas.

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