CEPF SMALL GRANT FINAL PROJECT COMPLETION REPORT

Organization Legal Name:	Center for Environmental and Rural Development (CERD)
Project Title:	Pilot different survey methods to identify Saola population in Pu Mat National Park of Nghe An Province
Date of Report:	30th October 2013
Report Author and Contact Information	Dr Cao Tien Trung - Dean of Biology Faculty, Vinh University 182 Le Duan street, Vinh city, Nghe An province, Vietnam Email: trungctbio@yahoo.com; Tel: 0383.855697/0383.592409 Mobil: 0903446646. Fax: 0383.520570

CEPF Region: Indo Burma Hotspot (Indochina Region)

Strategic Direction: Strategic Direction 1: Safeguard priority globally threatened species in Indochina by mitigating major threats.

Grant Amount: $18,483

Project Dates: 2013/2/15 - 2013/10/30

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

- Center for Environmental and Rural Development (CERD)
- Vinh University (Vietnam), was provide funding equipment for the laboratory and fieldwok and leech analysis, staff of Vinh University and masters students was participate in fieldwork and laboratory analysis.
- The 'Reserch Centre of Biodiversity and Genetic Resources' (CIBIO) in Portugal analysised dung of unglulates.
- The Ecology, Conservation, & Environment Center (ECEC), Kunming Institute of Zoology was analysis the leech.
- Staff of Geography Dept, Cambridge University was participate in fieldwork and provide technical for interview.
- Center for DNA technology (BIOMEDIC) analysis dung and leeches.
- Staff of Texas University of Austin was participate in fieldwork.

Conservation Impacts

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

Saola is probably the most globally endangered mammal in the ecosystem. Characteristics of Saola ecology (include distribution and population size) are hard to define because we have no effective method to find Saola. This is because Saola is a rare species, with overlapping habitat and field sign characteristics (e.g. dung trace, foot print) with other species. To date most information on Saola has come from local people. While this information is very valuable, local people sometimes consciously provide incorrect information during interviews (due to the fear of receiving legal punishment for former activities, or concern of limitations from future conservation).

Approaching indigenous knowledge will help identify Saola population easier and more realistic, while camera capture, analysis of excrement and terrestrial leech parasitizes on Saola will help confirming existence of Saola population at the area.

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

Pu Mat National Park covers an area of 94,000 ha and is located in South Nghe An province, Vietnam. It forms an outlier of the Annamite mountains, being separated from the main mountain chain by the Ca River. Its Saola have previously been very little studied, this Pilot survey method Assessment provides information population of Saola helps to reinforce the conservation significance of the area.

1. Interview surveyed

1.1. Pilot interview field survey

The project research team (comprising the Nicholas Wilkinson, Dr Cao Tien Trung, four Vietnamese students from Vinh University, three Laotian students from Vinh University, and two additional member of Pu Mat staff) spent eight days in the vicinity of Pu Mat National Park, Nghe An Province, Vietnam. The primary aim of this pilot survey was to trial interview methods and associated community data-collection techniques, in order to develop a regionally appropriate and culturally sensitive standardized questionnaire and fieldwork protocols for wider use across different sites. The pilot survey also served as an initial training period for the students associated with the project, and who will also be involved with data collection during the project's main fieldwork phase, in order to build up their capacity to carry out community interviews without direct supervision in the future.

Figure 1. Luc Son village, Pu Mat National Park, Nghe An Province, Vietnam (photo copyright Samuel Turvey).

Fieldwork was conducted in two communities situated on the margin of the national park, Trung Chinh village and Luc Son villages (Figure 2). Both villages rely on the neighbouring forests of the national park for hunting and other non-timber forest products (NTFPs), and previous small-scale and non-standardized community interview projects have documented a series of relatively recent saola reports from hunters in Trung Chinh village (Tham Ngoc Diep et al. 2004). Both villages are also easily accessible from Pu Mat National Park headquarters, so that although the research team stayed in local accommodation for the duration of interview work in each village, this enabled easy communication and travel to the park headquarters when necessary. Respondents in these villages speak Vietnamese and Thai; our research team included native Lao speakers, a

language which is mutually intelligible with Thai, so that there were no translation problems during interviews.

The pilot survey aimed to identify the most appropriate methods for the following steps of the community interview process:

- Identifying/locating respondents who hunt in Pu Mat National Park, and who have extensive knowledge about local forest usage and the park's large mammal fauna;
- Determining spatial patterns of community usage of Pu Mat National Park;
- Determining local names for landscape features in Pu Mat National Park;
- Optimizing accuracy of recall of past sighting events for saola and other species;
- Determining past and present levels of hunting in Pu Mat National Park;
- Determining local names for different large mammal species, and accurately correlating this local ethnozoological classification system with scientifically recognized large mammal species;
- Collecting quantitative data on sighting records for saola and other large mammal species.

Figure 2. Community mapping exercise during respondent focal group meeting, using beans to indicate areas of the national park that are visited by hunters from the village. Trung Chinh village, Pu Mat National Park, Nghe An Province, Vietnam(photo copyright Cao Tien Trung).

1.2. Community survey protocols

Identification and location of prospective respondents was trialled both through the help of a local community leader, and through opportunistic encounters and snowball sampling by the research team. Both of these approaches have different strengths and weaknesses. Local community leaders may preferentially select a biased subset of respondents for interview (e.g. close acquaintances, or community members who otherwise share closer patterns of socio-economic status than given by a random sample of community representatives), and may also request

payment for their assistance. Conversely, locating prospective respondents without assistance from community representatives proved on several occasions to take considerably longer than anticipated, resulting in reduced levels of data collection. It was concluded that respondent identification should be flexible during the main phase of the survey, with local community leaders, opportunistic encounters and snowball sampling all available as potential methods of respondent identification depending on specific conditions in different villages. However, it is important that all interviews should record how specific respondents were located, to permit subsequent identification and control of any biases in the data that may result from different location methods.

It was important not to target only those respondents who were previously identified as having seen saola, but instead any respondents who were considered knowledgeable about the park's wildlife and local ecological conditions. Although community leaders and respondents were all informed about the general aims of the interview project in terms of collecting local ecological knowledge for use in understanding the status of local mammal populations, they were therefore not told that gathering data on saola in particular was a primary goal, to avoid biasing their responses or the respondent selection process. This wider respondent sampling approach will permit comparison of proportions of knowledgeable hunters across different communities who have encountered saola over set time periods (e.g. during the past decade), which can then be used as a metric of relative saola abundance across its range (see Turvey et al. in press for a similar interview approach used for measuring relative abundance patterns for Yangtze cetaceans across different sites).

It is necessary to quantify the spatial extent of forest usage by different communities in our planned study regions, in order to ensure the maximum spatial coverage of areas of the park for which local ecological knowledge exists during the main phase of the interview survey, and conversely to identify areas of the park for which data on saola presence/absence cannot be determined using interviews due to spatially uneven patterns of forest usage by local communities. Focal groups of 4-6 older respondents were convened at the start of each village visit to conduct community mapping. By placing beans on a large map of each study region (Figure 3), they were able to demonstrate which regions of the park were used by their community for hunting and/or other NTFP extraction, representing the geographical area for which that village could potentially provide data on saola sightings. They were also able to name relevant landscape features (based around stream catchments) across this area of forest, so that any saola sightings with associated geographical data subsequently reported from the village could be located on the map with relative accuracy.

The same focal group of older respondents was then used to put together a locally appropriate timeline, made up of significant events that affected the village in a known calendar year over the past decade (e.g. construction of roads or mobile telephone masts; local elections). The timeline was then used during subsequent interviews to provide a temporal framework of episodic memory, within which reported mammal sighting events could be placed into a more accurate temporal sequence in relation to other memorable events known to community members.

It was initially hoped that the village timeline could also be used to quantify past and present levels of hunting by respondents during interviews, to provide an approximate measure of temporal patterns of "survey effort" (i.e. time spent in the park) that could be used to control for variation in mammal sighting dates. However, although respondents were prepared to discuss past patterns of hunting effort in the park with interviewers and to demonstrate relative levels of past hunting using small piles of beans placed on a timeline, they were unwilling to discuss current hunting activities, and typically claimed that they no longer hunted in the park. It was therefore unfortunately not possible to collect meaningful comparative data on variation in survey effort over time. We have subsequently controlled for this by including additional questions in the interview questionnaire about sighting histories of commonly hunted mammal species (see below), to determine whether respondents still report having hunted any species during the past 12 months.

Village respondents frequently used non-standard vernacular names to refer to different mammal species encountered in the national park. A second concern is that local ethnozoological classification systems may not accurately discriminate between morphologically similar species (e.g. different muntjac species). All of the student members of the research team were trained in the accurate identification of different Vietnamese large mammal species at the start of the pilot survey, but correlating local names and species concepts used in different villages with standard Vietnamese names for species of interest was an extremely important concern during interviews. Different approaches for standardizing species names and concepts were trialled during the pilot survey, including both the use of photographic cue cards containing a range of local and non-local mammal species, and informal discussions during initial focal group sessions about mammals that were encountered in the park. In order to avoid circularity or leading questions during the interview process, it was concluded that the best approach was to provide each respondent with a very brief description of each mammal species of interest, and then ask them to give its local name and a further description to confirm that they recognized it as a distinct species.

Interview questionnaire

Trialling of a series of different sets of interview questions led to the refinement and development of a final standard interview questionnaire by the end of the pilot survey (see Appendix 1). This includes questions on the following subjects:

- Temporal, geographical, and other details of last-sighting events (including both hunting records and other sightings) for all of the wild ungulate species that may potentially be encountered (or occurred in the relatively recent past) in protected areas across the range of the saola:
    - Sambar (Rusa unicolor)
    - Serow (Capricornis milneedwardsi)
    - Saola (Pseudoryx nghetinhensis)
    - Muntjac (three species)
    - Mouse deer (Tragulus kanchil)
    - Rhinoceros (two regionally extinct species)
    - Asian elephant (Elephas maximus)
    - Gaur (Bos gaurus)
    - Wild pig (Sus scrofa and possibly S. bucculentus)
- Any respondents who reported saola encounters were also asked further questions about the details of their sightings, which were recorded on a separate saola-specific datasheet previously developed by the Saola Working Group (2009).

1.3. Main survey coverage

Following completion of the pilot survey and estimation of the time required to conduct interviews, it was decided that the project funding could be used to cover three main areas: Pu Mat (Vietnam), and Viengthong district (Bolikhamxay province, Lao PDR).

- Pu Mat is one Vietnamese national parks in the north of the saola's range. The saola populations of these parks attracted significant attention and funds in the early 2000s, but there has been no significant survey or conservation work at either site since 2005.
- Viengthong is contiguous with Pu Mat National Park and is the most poorly surveyed part of the saola's known range. The southern part of this area was covered by a team of three Lao undergraduate students. Surveys in the northern half of the region unfortunately had to be suspended due to time and money constraints.

Community mapping in Pu Mat
Personnel:

Nicholas Wilkinson	Cambrigdge PhD students
Võ Công Anh Tuấn	(Pù Mát NP, Vinh University student with Darwin project scholarship)
Nguyễn Sỹ Quốc	(Pù Mát NP)
Nguyễn Mạnh Hùng	(Pù Mát NP)
Cao Tien Trung	Vinh University
Do van Thoai	Vinh University student
Dang Thi Hoa	Vinh University student
Nguyen Van Thanh	Vinh University student

Location: Five communes: Mon Son, Chau Khe, Luc Da, Con Cuong district; Tam Dinh and Tam Hop Communes, Tuong Duong district, Nghe An province.

Results: Photographs of beans placed on maps by villagers allowed us to divide up the park's surrounding villages according to their approximate use zones (Figure 3). This map was used to target villages for subsequent surveys in order to achieve complete coverage of the park's area.

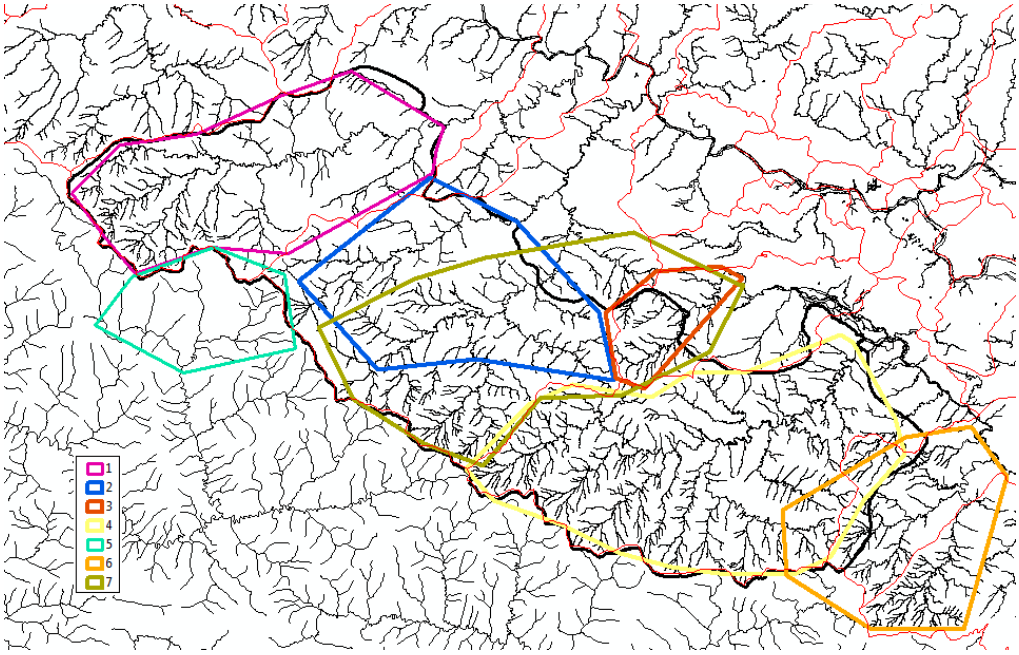


Figure 3. Pu Mat National Park, divided by village use areas.

Field schedule:

Location	Zone (see map above)
Môn Sơn commune	4
Luc Da commune	7
Bu and Na villages, Châu Khê commune	2
Tam Dinh commune	1
Chi Khe commune	6
Tam Hop commune	1

Activities: Ungulate sighting interviews following the method described above. The student team typically operated with an initial meeting with community leaders, who were compensated for their time, and subsequent use of opportunistic and snowball sampling with community members in their homes. In total, using both sampling methods, students collected 150 interview datasheets from Pu Mat. Only a small number of interviews were conducted in villages using zone 7 because this zone was well-covered during the pilot survey. Conversely, a long time was spent in two villages using zone 2, because the initial trip occurred in the harvest period and finding interviewees was difficult. Additionally, this was the only place where the team was interviewing members of the Dan Lai ethnic group, and time was needed to learn local names of ungulate species and culturally appropriate ways of approaching candidates for interview surveys.

Viengthong district: faunal interviews

This area, across the border from Pu Mat National Park, has been one of the most poorly surveyed for Saola due to past difficulties in getting permissions. In the course of this project, we were able to get permission only for a team of three Laotian undergraduate students studying at Vinh to conduct surveys in the area.

Personnnel:

Kouvang Kacha	4rd year undergraduate, Vinh University, Lao national, H'Mong language speaker
Thongsay Sysomphone	4rd year undergraduate, Vinh University, Lao national
Sousakhone	4rd year undergraduate, Vinh University, Lao national

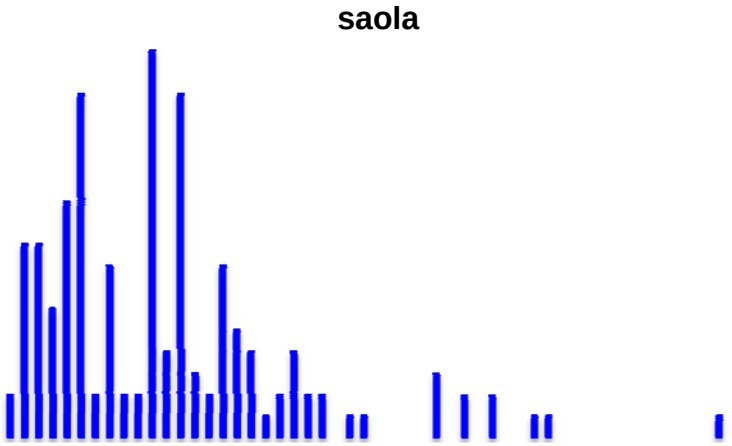
Activities: The team visited two of the four ethnic H'Mong villages in the forests along the border: Na Tan and Na Nhang. The sparser population density in Lao PDR and the need to hire a car meant that fewer interview data could be collected for the same amount of money. It was not possible, with the funds and time available, to reach all four villages as planned, but the areas of cognizance of these two villages seem to cover the whole southern half of the district's forests, including all areas contiguous with Pu Mat. They are therefore an important complement to the Pu Mat dataset. The team collected a total of 60 datasheets from these two villages.

1.3. Results

In total, 178 sets of interview questionnaires were obtained from Pu Mat, 36 from Viengthong, (total = 214). Analysis of these data is currently underway, but we are able to present preliminary findings and their implications for the regional status of saola and other ungulates.

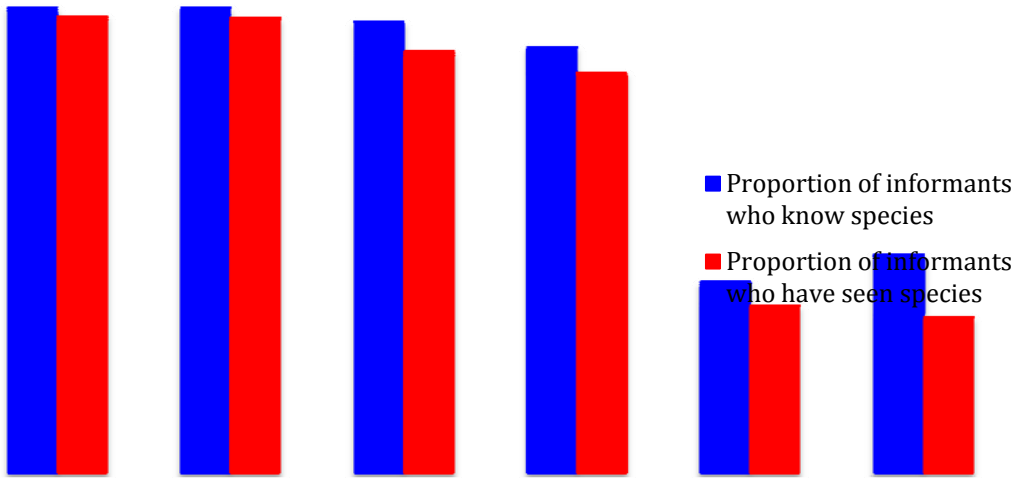
a) Frequency distributions of ungulate last-sighting dates over time

Comparison of last-sighting date frequency distributions for saola and five other Annamite ungulates (data combined across all sites) reveals that saola last-sighting dates peak around 10 years ago, whereas other ungulates have much more recent temporal distributions of last-sighting dates, indicating that saola are encountered much less frequently than other ungulates by forest users across the study region. Further analysis of these data will follow the methods of Turvey et al. (2012).



b) Local knowledge of Annamite ungulates

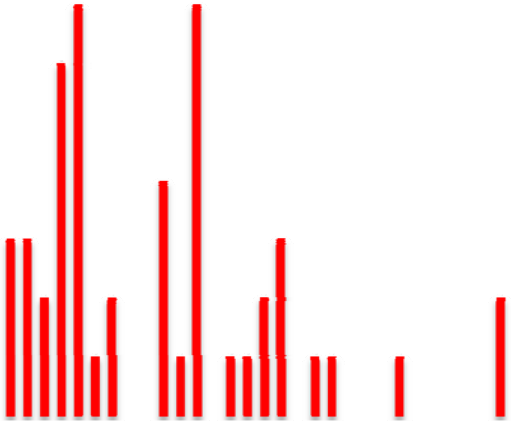
Nearly all informants across the study region can recognize/accurately describe and have seen muntjac, wild pig, sambar and serow. However, a much smaller proportion of informants (<50%) can either recognize/accurately describe or have seen saola, indicating that this species is far less frequently encountered than other large-bodied ungulates in the Annamites. Interestingly, the small-bodied mouse deer is similarly infrequently recognized or seen by informants across the study region; this may reflect similar patterns of underlying ecological rarity for this species, or alternately confusion with muntjac and/or decreased likelihood of detection (especially during hunting activities) due to its much smaller size. Further analysis will investigate relative patterns of awareness and experience of these ungulate species between different study regions.



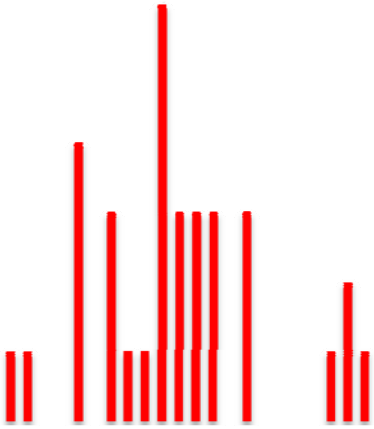
c) Frequency distributions of saola last-sighting dates between study areas

Comparison of saola records between the four different study areas shows that last-sighting reports span a considerable time period at each site. However, last-sighting dates appear to be slightly more recent in time overall at Pu Mat in comparison to Viengthong. Further analysis of these data will investigate and quantify any genuine differences in last-sighting date distributions between sites.

Pu Mat

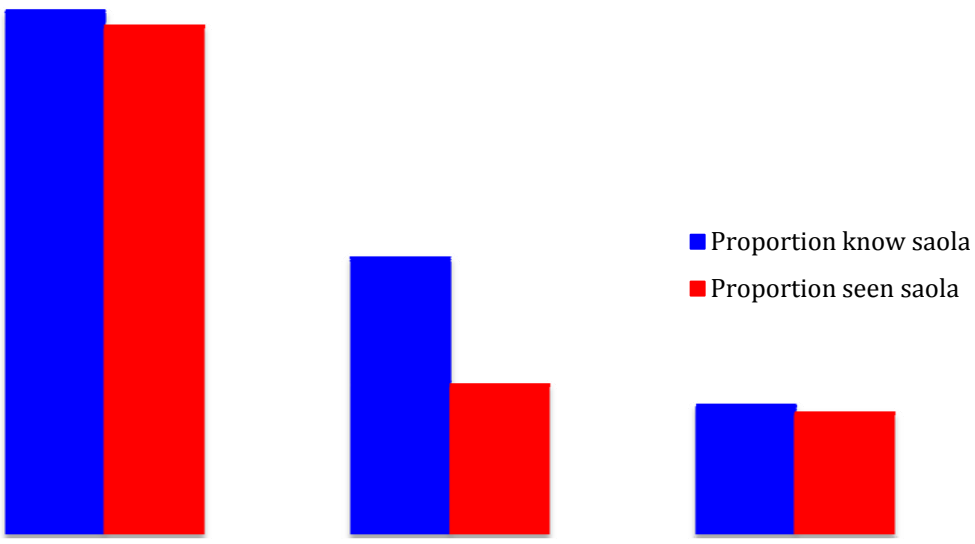


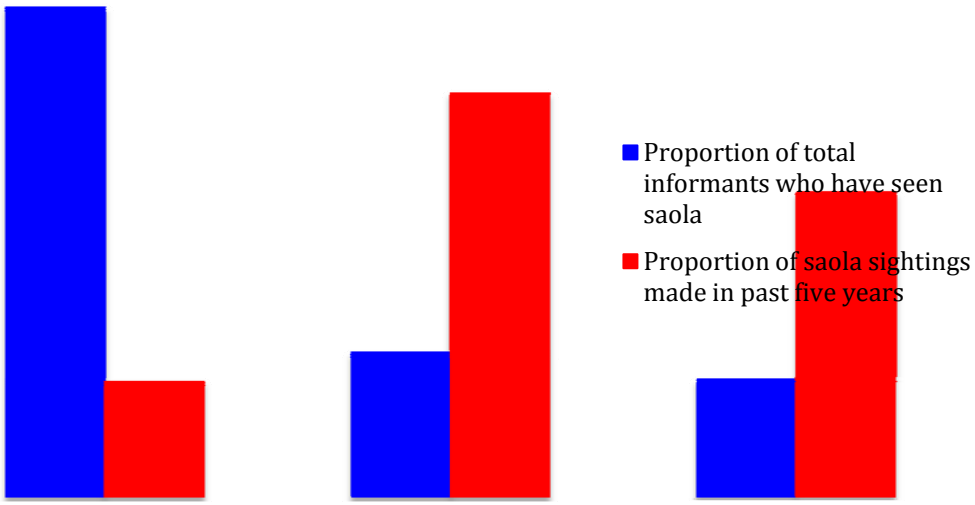
Viengthong

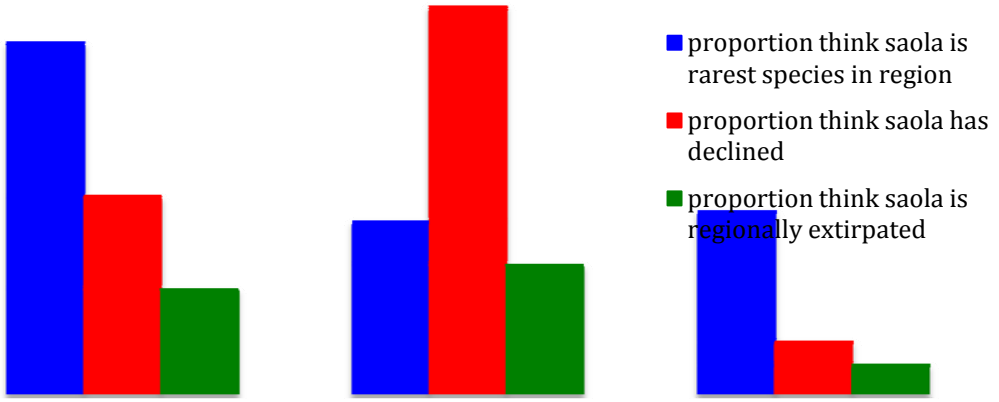


d) Landscape-level variation in knowledge and experience of saola

Patterns of local awareness and experience of saola vary markedly between Pu Mat and Viengthong, suggesting that saola populations in these regions have experienced very different population dynamics in recent years (Vu Quang is excluded from this initial comparative analysis due to low sample size). Proportions of informants who can recognize saola or have seen saola during the course of their lives are much higher at Viengthong than at either Vietnamese region, suggesting that saola were encountered more regularly in the Viengthong landscape in the past. However, a far lower proportion of saola sightings from Viengthong have been made in the past five years in comparison to Pu Mat, and more informants at Viengthong consider that saola have declined or may even be regionally extirpated in comparison to the Vietnamese regions. These data suggest that saola populations at Pu Mat have been small and rarely encountered during the recent past, but have not markedly declined in recent years and are still encountered occasionally by forest users. In contrast, saola populations at Viengthong may have been larger in the past, but appear to have experienced a relatively recent population decline and may now be extremely rare. This apparent population collapse at Viengthong may reflect an increasing exploitation of wildlife in eastern Lao PDR by poachers crossing into the country from Vietnam. These different patterns of saola population decline and abundance have important conservation management implications across the Annamite landscape.


Proportion know saola
Proportion seen saola


Proportion of total informants who have seen saola
Proportion of saola sightings made in past five years



2. Line transect surveys for Saola

2.1. Methodology

Field observations were collected while walking standard line transects (cross-sectional sample method: Burnham & Anderson 1984). The locations of transects were mapped using hand-held GPS units (Garmin 12) and survey distances were measured from the resulting maps. Survey times were also recorded.

When conducting surveys, attempts were made to sample a variety of habitats (e.g. valley, slope and ridge-top) but also to visit sites likely to be of particular significance for wildlife.
For each encounter (direct or indirect) with species, the following information was recorded:

- Date and time
- GPS location
- Altitude (recorded using a professional altimeter)
- Local habitat type: active and fallow swidden fields, bamboo forest, secondary evergreen forest, primary evergreen forest, primary forest on limestone, sub-montane forest, riverine forest, open water (streams and rivers)
- Means of identification: direct sighting, tracks*, food remains, etc.

  * The majority of Saola records were by observation of tracks. Tracks were quantified as far as possible, but on occasion numbers of individuals were difficult to determine. The age of tracks was also estimated as:
  - New: clearly defined tracks probably made within 24 hours.
  - Recent: remained clear but probably over 24 hours old.
  - Old: difficult to age but tracks faded and many individual prints no longer visible.

2.2. Results

Total of 6 fieldtrip were conducted in Pumat NP and 108km were counted. Tracks of Saola were found in four places (identified by experience of researcher and local guider); in one of these the location was known because SFNC project had been taken photograph(Bong streams). Three further track of Saola were found on Lozo, Muong and Khang streams; The track found in Lozo stream at 1,000m altitude

Saola preferred habitat appears to be limestone mountains and streams with slow flowing water. They are reported to feed on plants, ripe fruits and leaves from some large trees.

Figure 4. Saola at Camera traps at Pumat, 2002.

Table 1. Frequency of occurrence of Saola Pseudoryx nghetinhensis at Pu Mat NP

Transects	Habitat	No. encounters	Km surveyed	Encounters / km
T3.4	Mon Son, Co Phat route: Primary forest, water fall	1	16	0.0625
T2.3	Chi Khe, Trung Chinh village route: Primary forest, near border	1	18	0.0556
T1.6	Chau Khe, Bu village rooute: secondary forest,	1	14	0.0714
T6.5	Tam Hop, Bung village route: primary forest	1	16	0.0625

3. Camera traps surveys

3.1. Methods

This can be considered an alternative method to Quadrat sampling but, because of the cost, it cannot be employed at many sites to be deployed at high-priority target sites. Essentially the researcher could take camera traps and decide, after searching a site, whether they should be deployed there.
The number of 15 traps were set at Pumat NP. The process of searching a quadrat intensively may disturb animals which will then not return, so camera trapping will not within quadrats.

3.2. Result

The 15 camera traps were set in 45 days and total 675 camera trap days at Pu Mat NP. There were five photos of macaques, 4 photos of wild pigs, 2 photos of Muntjacts and 6 photos of birds recorded and no photo of Saola recorded during the time surveyed.

4. Dung surveyed

4.1. Methods

Within a 200m square quadrat, search thoroughly for Saola sign and, on detecting abundant feeding sign or an especially clear trail of footprints, follow the trail to search for dung. Using a GPS with a screen and stored topographic map of the area exported to the GPS makes this much

easier. Use pre-prepared datasheets to record carefully defined kinds of sign, also record basic habitat data. A more detailed description of the method is available.
There should be an equal number of targeted and randomly selected quadrats.
Randomly selected quadrats should be selected at random from the survey grid.
Some quadrats may be targeted: i.e. places where research teams have detected feeding sign and/or places where local people have reported recent sightings of Saola. In this case, however, the quadrat should be randomly selected from within the 1km gridsquare where the sighting occurred. This is to avoid over-sampling of habitat types frequented by local people .

The Saola Working Group had discussions with international research centres interested in identifying dung of Annamite ungulates to species level by mtDNA analysis. It is almost certain that costs for this analysis, and for postage and packaging, will be covered by the international partner CIBIO university, Portugal and that this arrangement was last in 2011; Center of DNA technology of Vietnam (Biomedic) also analysis the dung of ungulates.

4.2. Result

22 samples of Dung were sent to CIBIO and BIOMEDIC, two samples Dang of saola were recorded by BIOMEDIC,

5. Leechs surveyed

5.1. Methods

Field protocols for leech collection.
Equipment required

- 50-ml falcon screw-top plastic sampling tubes pre-filed with RNAlatter buffer (approx 25-ml per tube). One tube for each day of the research. Each tube clearly labeled with GPS ID, date, team leader initials, and forest sub-compartment ID.
- GPS field data collection form .
- Leech collection data form to be completed at the end of the fieldwork.

Data collection protocols
One research team member of the group will collect leeches. For hygiene reasons this research member will only collect leeches from his clothes/body and from the vegetation not from the bodies of other researcher. Leeches which have obviously fed on people (i.e. large and bloated) should not be collected. Each leech collected is placed within the sampling tube. Leeches should be collected as-and-when encountered with ideally one leach every 30 minutes (approximately when the research team stops and records UTM position into MIST form) with approximately 40-60 leeches collected per day. A new sampling tube is used for each day of the researcher and is clearly labeled with GPS, date, team leader initials. One research team member should note the number of leeches collected each day and record on the sampling tube. At the end of the day the research team leader must place a small label into the sampling tube written in pencil on tracing paper. The label should record the initials of research team leader and the date.
Post collection storage
At the end of the fieldwork the research team leader must collect all sampling tubes and fill-in a leech sampling datasheet. The number of leeches and sampling tubes collected. The team leader must also check all sampling tubes are clearly labeled. At the end of the fielwork the Team leader must send the leech sampling tubes and completed data sheets at Vinh. This should be when they send the GPS to the office. The leech sampling tubes and data-sheet should be placed in a plastic folder. The leech sampling tubes will then be stored and sent to the Denmark; original data-sheets will be keep in Vinh

5.2. Result

82 samples of leeches have collected in the field of Pu Mat NP; All of samples are sending to The Ecology, Conservation, & Environment Center (ECEC), Kunming Institute of Zoology. The result of leeches analysis will provides in near future.

The result of pilot difference method by interview, tracks and dung analysis have shown the relatively large extant populations of endemic species Saola, are particularly significant.

All major expected results were met.

Please provide the following information where relevant:

Hectares Protected: n/a
Species Conserved: don't know yet
Corridors Created: n/a

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

Pu Mat FPD will follow up this method (especial dung and leeches methods) to determine population of Saola in total area of Pu Mat NP.

Raise awareness and improve the capacity of field staff of Pu Mat National Park to monitor populations of Saola in the area

Were there any unexpected impacts (positive or negative)?

None

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.

The population of Saola in Pu Mat NP is reported as evidence higher than expected (by interview tracks and dung evidence). Verification of the extent of this population and management-oriented research is of high priority.

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

Characteristics of Saola ecology (include distribution and population size) are hard to define because we have no effective method to find Saola. This is because Saola is a rare species, with overlapping habitat and field sign characteristics (e.g. dung trace, foot print) with other species. To date most information on Saola has come from local people. The result has show that interview, track survey and dung survey could provide evidence of Saola.

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

Nothing major to report.

Other lessons learned relevant to conservation community:

Saola conservation and management should be viewed as a social issue. When Saola populations were abundant, hunting and trading were widespread and the non-sustainable use of populations was not regarded as important. It is still not regarded as important, although

populations are now seriously depleted. Professional turtle hunters are hard to control as there is no history of sustainable use and they are not well aware of the real value of conservation. It is advisory to begin by raising the awareness of benefits from Saola conservation for local people in order that they should be more responsible for Saola conservation.

Current management regulations are not very effective for Saola conservation: local support for Saola conservation is required. The relationship between local communities surrounding the Pu Mat NP and forest resources should be recognized as it has existed for a long time (men have long been involved in hunting, and women in collecting other forest products). It is necessary to consider the potential for community-based conservation as a part of community development work. Community-based conservation, if running well at Pu Mat NP, would become vital to long-term conservation based on jointly sharing resources.

Defining the role of community members at the village level is required. This could be undertaken alongside the continuing development as Wildlife Conservation Clubs in Pu Huong NR.

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.

Donor	Type of Funding*	Amount	Notes
Vinh University	A	$6,000	
Reserch Centre of Biodiversity and Genetic Resources' (CIBIO)	A	$3,000	

***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.

Summarize any unplanned sustainability or replicability achieved.

The reported by local people, track and dung sample analysis that saola is still appear in the region. The saola is restricted to certain habitats or to refuge areas remote from human habitation and poorly accessible to hunters. The result of pilot different survey methods to identify Saola in Pu Mat National Park of Nghe An Province has shown that interview, track and dung methods are hight priority for this species; camera traps is low priority for saola survey

Safeguard Policy Assessment

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

N/A

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.	no			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?	no			Please also include name of the protected area. If more than one, please include the number of hectares strengthened for each one.
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.	no			
4. Did your project effectively introduce or strengthen biodiversity conservation in management practices outside protected areas? If so, please indicate how many hectares.	no			
5. If your project promotes the sustainable use of natural resources, how many local communities accrued tangible socioeconomic benefits? Please complete Table 1below.	no			

If you answered yes to question 5, please complete the following table.

Table 1. Socioeconomic Benefits to Target Communities

Please complete this table if your project provided concrete socioeconomic benefits to local communities. List the name of each community in column one. In the subsequent columns under Community Characteristics and Nature of Socioeconomic Benefit, place an X in all relevant boxes. In the bottom row, provide the totals of the Xs for each column.

Name of Community	Community Characteristics								Nature of Socioeconomic Benefit												
									Increased Income due to:												
	Small landowners	Subsistence economy	Indigenous/ ethnic peoples	Pastoralists/nomadic peoples	Recent migrants	Urban communities	Communities falling below the poverty rate	Other	Adoption of sustainable natural resources management practices	Ecotourism revenues	Park management activities	Payment for environmental services	Increased food security due to the adoption of sustainable fishing, hunting, or agricultural practices	More secure access to water resources	Improved tenure in land or other natural resource due to titling, reduction of colonization, etc.	Reduced risk of natural disasters (fires, landslides, flooding, etc)	More secure sources of energy	Increased access to public services, such as education, health, or credit	Improved use of traditional knowledge for environmental management	More participatory decision-making due to strengthened civil society and governance.	Other
Total																					

If you marked "Other", please provide detail on the nature of the Community Characteristic and Socioeconomic Benefit:

Additional Comments/Recommendations

Continue implementing project to get information about Saola in the habitats, CERD needs to work more to commit to searching for funding and technical for projects in the future
Conduct survey in potential area in the north of Bolikhamxay, Xieng Khoang - Lao and Nghe An – Vietnam
Continue training to improve awareness, skill to inspect for official in charge of natural conservation

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.

Please include your full contact details below:

Name: Dr Cao Tien Trung
Organization name: Center for Environmental and Rural Development (CERD)
Mailing address: trungctbio@yahoo.com
Tel: +84383.855697/0383592409
Fax:+84383.520570
E-mail: trungctbio@yahoo.com