CEPF FINAL PROJECT COMPLETION REPORT

Organization Legal Name:	Centre for Natural Resources and Environmental Studies
Project Title:	Identifying priority populations and reviewing current known distributions for threatened bat and turtle species in Northern and Central Vietnam
Date of Report:	Feb/29/2012
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CEPF Region: Indo-Burma Hotspot

Strategic Direction: Strategic Direction 1 "Safeguard priority globally threatened species in Indochina by mitigating major threats" - Priority 1.1: Identify and secure core populations of 67 globally threatened species from over exploitation and illegal trade

Grant Amount: US$42,855.00

Project Dates: 1 Jan, 2010 to 31 December, 2011

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

Cleveland Metroparks Zoo's Asian Turtle Program (ATP). Staff of ATP collaborated on the development of survey plans with CRES. A new field staff member was hired to work on the project and participated in some of the interview surveys conducted around Son La, Tuyen Quang, Thanh Hoa and Ha Tinh provinces. Furthermore the complementary interview surveys being conducted by the ATP under a different CEPF small grant for awareness and conservation on *Rafetus swinhoei* was able to provide important information to this project, with Pu Hu Nature Reserve identified as a potentially important site for *Cuora galbinifrons*.

All field surveys conducted in Pu Mat National Park, Xuan Nha Nature Reserve, Trung Minh Forest, Pu Hu Nature Reserve and Vu Quang National Park where lead and primarily undertaken by the ATP field team follow the return to full time study of the researcher employed by CRES to undertake these surveys.

The ATP has collaborated with CRES on completion of data analysis and report writing following surveys and with further develop conservation strategies with CRES upon these findings. Specifically, the team plans to expand conservation efforts at a number of sites in northern Vietnam for a number of species including *Cuora galbinifrons* and *Cuora zhoui*.

Project Rationale - Describe the conservation need (key threats and/or important opportunities) your project aims to address and what would happen if this project is not implemented.

I.I. Population status survey

Vietnam is well known for its wealth of biodiversity, including a large proportion of endemic taxa. According to a recent comprehensive survey of the country's biodiversity, Vietnam is ranked among top 25 countries in the world in terms of the number of plant, bird, and mammal species on a unit of area (Sterling et al., 2006). However, the country natural heritage is also facing many threats from overexploitation and habitat degradation to pollution and invasive species. According to the recent estimate, 16% of mammal, 9% of reptile, and 5% of bird species of the country are globally threatened (Sterling et al., 2006).

Although in many places around the world habitat degradation has been considered a major threat to local biodiversity, overexploitation in Vietnam, like in other Southeast Asian countries, is far more destructive (Nguyen, 2003; Sterling et al., 2006; Le, 2007). Overexploitation for local demands and supplying the international wildlife trade has driven many populations to the brink of extinction. Over the past decade, Vietnam has become a crossroad for wildlife trade activities. Wildlife species from Laos, Cambodia, Myanmar, Thailand, Malaysia, and Indonesia are channeled through Vietnam to China, Taiwan, Korea, Hong Kong, and Singapore. In Vietnam, wildlife is mostly hunted from protected areas. Illegal traders find multiple avenues for trafficking species across the border between Vietnam and China. Using public transportation, they hide the contraband in secret places or with livestock, or use false permits. Smugglers have also begun to use private vehicles to transport contraband in order to avoid confiscation. The trade involves a wide range of taxonomic groups and trade volume can be enormous. Total volume estimated for live and wildlife meat reached about 3,050 tons per year in 2002 with the total revenue of $66.5 million (Song, 2003; 2008).

Habitat destruction and degradation have also posed a significant threat to the country's biodiversity. Legal and illegal logging has had serious impacts on primary forests throughout the country. The expansion of agriculture and cash crop plantation, e.g., coffee and cashew, has further caused the shrinking of natural forests. Dam and road construction has also damaged natural habitats, both terrestrial and freshwater. For example, the construction of the Ho Chi Minh Highway is believed to affect at least ten protected areas it passes through and near along its 1690 km long. Pollution, invasive species, and climate change can potentially cause damages to natural populations, although their effects on biodiversity are still poorly documented (Sterling et al., 2006).

To better conserve endangered species in Vietnam it is necessary to prioritize conservation efforts. Through our activities, we have greatly increased the current knowledge on distribution and status of a collection of priority CEPF TFT and bat species in northern Vietnam. Specifically, we were able to collect data for the following priority species: the Indochinese Box Turtle (*Cuora galbinifrons*), Four-eyed Turtle (*Sacalia quadriocellata*), Impressed Tortoise (*Manouria impressa*), and Wattle-necked Softshell (*Palea steindechneri*). Information of other species, including Big-headed Turtle (*Platysternon megacephalum*) and Keeled Box Turtle (*Cuora mouhotii*) as well as many bat species was also recorded.

Upon completion of our research, we had a clearer understanding of distribution, direct and indirect threats, and priority areas for these species. We are using this information to develop recommended conservation measures and action plans for each species. This information will be provided to protected area management staff and wildlife protection authorities to assist in their decision making and is probably the most cost effective methods of reducing extinction risks faced by these species under growing pressure from over exploitation and habitat destruction

Follow these surveys a great deal of important information was collected. Interview information found a strong presence of illegal wildlife trade in turtles and other wildlife throughout the survey area. Particularly, in Nghe An province 171 field records were completed for approximate 20 species, many of which had been collected within the National Park. Pu Mat NP was also confirmed as an important site for both TFT and bats within Vietnam. Field surveys confirmed that the area has an apparently healthy and reproducing population of *Sacalia quadriocellata* while a critically endangered *Cuora galbinifrons* was also observed with a community within the protected area and strong interview information indicates the area still has a good viable population of this important species, although field surveys were unable to confirm the species in the wild. We were also able to locate a wild *Cuora galbinifrons* in Pu Hu Nature Reserve, indicating this is a priority site for the species conservation.

Project Approach - Describe the proposed strategy and actions of your project in response to the conservation need stated above. Include the expected results of the project and any potential risks you face in implementing this plan. (No more than 500 words).

II. Project Approach

II.I. Population Status Survey

CRES conducted and coordinate survey activities in collaboration with its project partner, the Cleveland Metroparks Zoo's Asian Turtle Program. The species selected for the surveys proposed here was chosen from the CEPF priority species list, in addition they all occur within Northern Vietnam and in similar habitat. The survey techniques included standard non-lethal aquatic traps, hunting dogs and timed transects used for turtle surveys and mist nets and harp traps used for bats, with research undertaken by experienced survey teams. For all turtles encountered photographic records and blood samples were taken, with all animals released after capture and processing. A limited number of bat specimens were collected for identification purposes.

Survey methods

For turtle survey, we used a combined approach, which included searching for the terrestrial *C. galbinifrons*, pit fall traps, walked transects, and hunting dogs. For aquatic species such as *S. quadriocellata* standard non-lethal aquatic traps was used. No live specimens were taken for any of the turtles encountered, only photographic records and tissue samples were collected using standardized data collection forms on which measurements, sex, age class and additional information about the environment were recorded. All animals encountered were marked with a unique identification number before being released to allow the potential for future recaptures to be recorded.

For bat survey, mist nets with different sizes (3m × 3m, 6m × 3m, 9m × 3m, 12m × 3m) and hard traps (1,5m × 1,5m) were used to capture bats. Nets and traps were set up across trail, stream, and cave where bats often use as their flyway. Nets and traps were checked frequently, especially during dawn and dusk when bats are most active. For some species, captured animals were measured using standard measurements. All turtle distribution records in a standard digital format (lat and long coordinates) were entered into a database and will be used to map each species distribution. An existing database has been developed and managed by the ATP and was utilized for this activity. A peer-reviewed paper was published based on the results of the bat survey in Pu Mat National Park. Other papers are currently under preparation.

II.II. Identifying local threats

Interviews with local hunters and trappers were conducted to obtain information regarding hunting and trapping techniques, species availability, source areas (in and outside protected areas), trapping seasonality, number of trappers and hunters involved. For other threats, such as habitat destruction and degradation, information was collected through our fieldtrips to natural habitats of these species. Interviews with relevant stakeholders, such as forest guards, protected area staff, and local people were also conducted to understand the root causes of these threats. Details of the direct threats were compiled for targeted species to recommend action plans to safeguard them from these pressures.

Conservation Impacts

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

- The project helps identify core populations of CEPF priority species and provide recommendations to better conserve these species under pressures of overexploitation and illegal trade.

Please summarize the overall results/impact of your project.

The project has enhanced scientific knowledge of targeted turtle and bat species. Through this, priority research and conservation activities will be developed to better protect them in their habitats. Collaboration between related organizations working on conservation has improved during the process of the project implementation with the research team gaining valuable experience in surveying and assessing threats to endangered species. These skills are crucial in planning future conservation efforts for these and other threatened species in the country. Future development of this is planned with additional collaboration at a number of sites identified through this project, primarily at Pu Mat National Park and Pu Hu and Xuan Nha Nature Reserve.

During our interview and field surveys, we are able to confirm the presence of a number important bat and turtle species. The data, thus, provide a good foundation for future research and conservation efforts in a large geographic area. Importantly, we discovered two CEPF priority species in the wild during our field surveys. Other potential areas for prioritizing conservation efforts have also been identified in the course of implementing this project.

Planned Long-term Impacts - 3+ years (as stated in the approved proposal):

- Scientific knowledge will be improved for target species
- Profile of target species will be raised among local wildlife protection authorities
- Priority areas for target species conservation will be better protected through recommendations made based on the findings of this project
- Better collaboration on turtle conservation among local, national, and international organizations and government agencies.
- Priority list of research and conservation activities are developed.

Actual Progress Toward Long-term Impacts at Completion:

Scientific knowledge of some turtle and bat species has been enhanced. Bat surveys added three species to the Pu Mat National Park's fauna. These surveys also indicate that with 43 species the Park has the highest bat diversity in the country. However, many species are facing a high level of local threats, including overexploitation for food and habitat degradation. Conservation recommendations have been sent to the Park's management.

Turtle interview information showed commonness and rarity of target and other turtle species. Following interview survey finding the selection of sites for field surveys was amended from the original proposal, with some new priority area for surveys selected. Similarly, Ba Be National Park and Tay Con Linh Nature Reserve was removed from our selected sites due to low species diversity described during interviews and a lack of information for *Cuora galbinifrons* a key focal species for field work

Four field surveys greatly increase knowledge on priority turtle areas in Northern Vietnam:

Pu Mat National Park, Nghe An Province

Sacalia quadriocellata in Pu Mat National Park with juveniles caught and three animals in a relatively short survey at and a small section of stream it appears Pu Mat has a healthy population of this species for which currently little is known although our interview indicated the presence of this species in the Park. Turtle hunting and collecting activities were still common inside the Park during the time of the survey. Some species, such as Big-headed Turtle and Indochinese Box Turtle fetched very high prices in the local markets.

Xuan Nha Nature Reserve, Son La Province

Xuan Nha Nature Reserve in Son La Province was identified through interview surveys as an interesting site for field work due to it high species diversity, seven species described in local interviews, and the occurrence of *Cuora galbinifrons.* Field surveys found good diversity with three important species observed during a single survey, *Platysternon megecephalum, Geoemyda spengleri* and *Manouria impressa* with the last one being CEPF priorities. The site had previously not be considered as a priority for TFT but with three important species confirmed and the likelihood that the critically endangered *Cuora galbinifrons* and endangered *Cuora mouhotii* also occur it would become an interesting site for future conservation focus.

Vu Quang National Park, Ha Tinh Province

Although interview surveys for Vu Quang National Park found interesting information regarding *Cuora galbinifrons*. More than 90% people interviewed were able to recognize this species and indicated that this species was still common in the Park. In addition, with trade records of *Cuora galbinifrons* observed during our interview surveys, it had a high potential for healthy populations of this species. However, field surveys produced little information from the national park. The time of the survey might have occurred off peak season of the species.

Pu Hu Nature Reserve, Thanh Hoa Province

Despite not being set as a priority area for surveys during the initial proposal Pu Hu Nature Reserve was selected for field work following interviews. This was the first site at which the survey dogs trained by the ATP produced results, with a wild *Cuora galbinifrons* being caught, confirming the species at the site. This is the first time the species was recorded in the area.

- Priority areas for target species will be better protected through recommendations made based on the findings of this project.

Following the survey a number of priority sites have been determine for future conservation action on TFT in northern Vietnam, these are Xuan Nha Nature Reserve in Son La Province and Pu Hu Nature Reserve in Thanh Hoa Province. Through collaborating with FPD on field surveys and reporting findings directly following each survey key, protected areas are better informed about species presence and their global importance.

- Better collaboration on species conservation among local, national, and international organizations and government agencies.

In completing this project, it is the first time that CRES and the ATP have collaborated closely on a research project. The results have been successful despite the challenges of having to replace the lead researcher part way through activities due to his commitment to complete further education studies.

- Priority list of research and conservation activities are developed for target species**.**

Research and conservation priorities are being developed for target turtle species.

Planned Short-term Impacts - 1 to 3 years (as stated in the approved proposal):

- Seven target protected areas will have better data regarding survey taxa.
- Focus species will have better information available on population distribution and status and threat levels.
- Protected area management and provincial and national wildlife protection authorities will be more aware of immediate conservation needs.
- Research team will gain valuable skills and experience critical for future research and conservation activities.
- Valuable resources will be produced through maps and reports.

Actual Progress Toward Short-term Impacts at Completion:

- Research team gains valuable skills and experience in interviewing local people and protected area staff to assess threats to targeted species, and in surveying threatened species.
- Protected area management and other related government agencies are aware of immediate conservation needs.
- Information on threat levels, population status and distribution of target species has been greatly improved in surveyed areas.

Please provide the following information where relevant:

Hectares Protected: 0
Species Conserved: 0
Corridors Created: 0

Describe the success or challenges of the project toward achieving its short-term and long-term impact objectives.
In addition to successes indicated in the actual long-term and short-term impact sections, the project faces some challenges. Due to the rarity of turtle species, it was difficult to locate good populations of these species in the survey sites. Moreover, with sustaining threats, mainly through wildlife trade, to turtle populations across Vietnam, it would be very challenging to conserve these species unless comprehensive conservation measures are implemented immediately.

Were there any unexpected impacts (positive or negative)? **No**

Project Components

Project Components*: Please report on results by project component. Reporting should reference specific products/deliverables from the approved project design and other relevant information.*

Component 1 Planned:
Core populations of priority tortoise and freshwater turtle species identified in northern and central Vietnam
Component 1 Actual at Completion:
Populations of CEPF priority species, including Indochinese Box Turtle, Four-eyed Turtle, Big-headed Turtle, and Impressed Tortoise have been identified during the interview and field surveys of the project.
Component 2 Planned:
Population and habitat of Vietnam Leaf-nosed Bat identified
Component 2 Actual at Completion:
Although no population of this species was identified during our survey, we found several new species to the survey site, Pu Mat National Park. In addition, the results of this study combined those derived from previous work show that the species is very rare or might have gone extinct. It is also important to review the taxonomic status of this species to confirm its validity.

Component 3 Planned:
Local community and protected area management staff awareness of the importance of identified turtle and bat populations raised
Component 3 Actual at Completion:
Awareness of threatened turtle and bat populations among local communities have been enhanced, especially in Pu Mat and Ba Be National Parks, where community meetings were held.
Component 4 Planned:
Knowledge of the distribution of and threats to targeted turtle and bat species increased among NGOs, enforcement agencies, and protected area management authorities in Vietnam
Component 4 Actual at Completion:
Vietnam Leaf-nosed Bat survey reports at Pu Mat Nature Reserve have been submitted and sent to the protected area management. In addition, a resulting paper has been published in a scientific conference's proceeding to help disseminate the study results. In addition, a synthesis report on status of targeted turtle species is currently being finalized and soon to be distributed to relevant stakeholders to raise their awareness in related issues.

Were any components unrealized? If so, how has this affected the overall impact of the project?
No

Please describe and submit (electronically if possible) any tools, products, or methodologies that resulted from this project or contributed to the results.

Lessons Learned

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

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

- Designing project, especially ones involve biotic survey, should take into account unexpected factors, such as seasonality and project personnel. In general, a project takes longer than it seems due to these factors.

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

Shortcomings:

Although data was collected using standard data collection methods which had previously been determined some data was lost due to a field officer being unable to locate notes collected on some interview surveys. As such the submission of data at regular intervals should also have been standardized.

Poor language abilities amongst some of the survey teams delayed to translation and review of interview and field survey findings for the international collaborators. Although a positive result from this has been a great improvement in English language by the team.

Success:

Through maintaining regular survey planning and discussion meetings we we're able to adapt the survey activity throughout the project period to focus on priorities as they changed. This was particularly useful when it came to determining the field survey sites for which our choices changed significantly from those suggested in the original proposal.

Other lessons learned relevant to conservation community:

None.

Additional Funding

Provide details of any additional funding that supported this project and any funding secured for the project, organization, or the region, as a result of the CEPF investment in this project.

Donor	Type of Funding*	Amount	Notes
Vietnam National University	Regional/Portfolio leveraging	$3,800	
CRES	In-Kind	$600	
Turtle Conservation Fund	Regional/Portfolio leveraging	$4,950	
Asian Turtle Program	In-Kind	$3,190	

Additional funding should be reported using the following categories:

A *Project co-financing (Other donors or your organization contribute to the direct costs of this 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 funded 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.

Data collected in this project will be used to design conservation measures, update conservation status as well as legal status nationally and internationally, and guide future more in-depth surveys of these species in priority sites. The results also help protected management make informed decisions in protecting these species from current pressures. Methods and approaches used in this study can be replicated in other regions in Vietnam and other countries in the world.

Summarize any unplanned sustainability or replicability achieved.

Safeguard Policy Assessment

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

Additional Comments/Recommendations

None.

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:

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*****If your grant has an end date other than JUNE 30, please complete the tables on the following pages*****

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, 2007 to June 30, 2008. (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: