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All the signs of effective management

As a result of wild cat research conducted by WWF Cambodia's Eastern Plains Landscape (EPL) project field staff, NGO partners and counterparts from the government's Forestry Administration, more leopards have been captured by camera traps in the Dry Forests suggesting this species is thriving on the increased availability of prey inside the protected areas.

"Measuring the effectiveness of protected area management can be a difficult and time consuming task, but once in a while you get a sign which points in all the right directions," said Mr Craig Bruce, EPL Project Manager.

This recent photo of a leopard, from November 2008, plus other photos, indicates that this species is reproducing and supports the view that the work of the dedicated field team is proving effective.

Patrols and law enforcement carried out by field rangers is undoubtedly reducing the threats to wildlife from hunting, with many species beginning to relax in the environment; photographing them is becoming a reality, even during daytime. Several of the rangers have observed leopard at a water hole in Mondulkiri Protected Forest (MPF) while on elephant-back patrols. This is a very positive sign not only that the leopard population is in good health, but also that wildlife is starting to lose the recent historical fear of human hunters associated with elephants.

"If wildlife research continues to produce interesting results, Cambodia will be proud to use the information to attract international and national ecotourists to experience the magnificent Cambodian Dry Forests wilderness," Mr Bruce said.

WWF and its government partners have established the basic foundations for the management of protected areas since 2001. Promoting the participation of local communities, setting up necessary infrastructures such as outposts and roads, and training fulltime staff for patrol and enforcement activities all help to ensure that the unique Cambodian natural heritage is conserved for future generations.

One of the recent camera trap photos of leopard taken in the Mondulkiri Protected Forest (MPF) in eastern Cambodia. The research also recorded the presence of Asian Elephant (1), Leopard Cat (2) and Golden Jackal (Asiatic Jackal) (3).

Recent highlights from the research team include camera trap photographs of groups of elephant with young calves from both MPF and Phnom Prich Wildlife Sanctuary, plus up to 9 individual Leopard from MPF and a single Clouded Leopard from PPWS. A number of tiger signs have been reported by rangers, particularly in MPF, and the research team continues to investigate these.

Inside this edition

Globally important site for endangered species discovered on the Mekong in Northern Cambodia

Text by Tep Asnarith

Between Kratie and Stung Treng towns, in northeast Cambodia, a remote 55km section of the Mekong River, that scientists have termed the 'Central Section', has been discovered to be of high biodiversity value both nationally and globally. Discoveries included one new species to science, 24 new species records for Cambodia and 36 fauna species that are globally threatened and listed under the "IUCN Red List", including breeding populations of birds, primates and turtles.

The findings are the result of a series of surveys jointly conducted by WWF, Fisheries Administration (FiA) and Forestry Administration (FA) of the Ministry of Agriculture Forestry and Fisheries (MAFF) in 2006/7. Among many exciting discoveries, the survey team recorded a new plant species (*Amorphophallus sp*., known as 'corpse plants') for science, as well as new national records of rare plants, fish and one reptile. The largest global populations of two bird species, White-shoulder Ibis and Mekong Wagtail, were found, as well as some of the largest breeding colonies in Southeast Asia of Plain Martin and nests of an endangered giant turtle. Of equal significance was the discovery of a near pristine region of tall riverine forest, waterways and island archipelagos, and a remarkable uninhabited section of river 40-50 km long.

FiA, FA and WWF compiled this fascinating research information and produced in late 2008 their first detailed scientific report titled '*Biological surveys of the Mekong River between Kratie and Stung Treng towns, northeast Cambodia*'. This report makes a significant contribution to scientists' knowledge and understanding of biodiversity of the Mekong River. The information collected during the surveys provides a scientific basis for management of this 'Central Section'.

"The Royal Government of Cambodia recognises the importance of maintaining the Mekong's resources for biodiversity, national food security and development, and reflect this need in the targets of the National Biodiversity Strategy and Action Plan 2002 and Cambodia's Millennium Development Goals," said Mr Seng Teak, WWF Country Director. To achieve these goals, he continued, a critical first step is to document the Mekong's biodiversity and natural resources.

One of the world's largest and least studied freshwater turtles, Cantor's Giant Softshell Turtle, has been found in remote region of Cambodian Mekong, raising hopes that the threatened species can be saved from extinction.

The study area is described by scientists as including probably the last suitable freshwater habitat for the critically endangered Irrawaddy Dolphin; the Indochinese region's last remaining Hog Deer population; and the rare Cantor's Giant Softshell Turtle once thought to be extinct in the region.

"Unlike many other mainstream sections of the Mekong in Cambodia, Lao PDR, Thailand and Vietnam, this particular part of the river remains relatively untouched by human activities," said Mr Richard Zanre, WWF Freshwater Program Manager. This region, he added, used to be one of the last strongholds of the Khmer Rouge and was off-limits to local and foreign agencies until as late as 1998.

This situation is changing rapidly: the survey team observed extensive human in-migration to the site, typically by poor and landless people. New settlements are being created, and established villages are expanding. Timber logging, clearance of riverbanks to create homes and rice fields, intensive fishing and wildlife trade are increasing daily.

Also new economic development, especially water-based infrastructure, is placing new pressures on wetland resources. Extractive projects including gold mining, sand and gravel extraction, road building, and granting of concessions in seasonally inundated forest areas were also identified as major problems of local concern. Without proper control, these activities will soon degrade the local ecology, exhaust natural resources and result in severe long-term impacts for local livelihoods as well as biodiversity.

At a workshop in Kratie in 2008 to present the research findings to Government stakeholders, participants agreed that the "Central Section" should be proposed as a special management area. Mr Phay Somany, WWF Senior Officer, said that such a designation for conservation and sustainable livelihood development would be an intelligent and timely responsive measure by MAFF and provincial authorities.

"Chances are good to safeguard these unique wetland values for the benefits of biodiversity as well as local people whose livelihoods depend mainly upon Mekong fisheries," Mr Somany said.

WWF and partners are now developing a programme to assist national and provincial agencies in effective management of the site, including capacity building, awareness raising among local communities adjacent to the site, a rapid socio-economic survey of target communities, and sustainable livelihoods development to ensure that critical resources, especially fish and timber, are secured for local communities.

Saving the country's population of Yellow-cheeked Crested Gibbon in the Eastern Plains Landscape

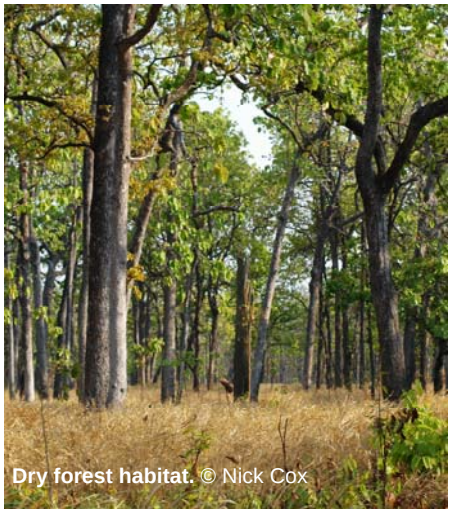
Text by Tep Asnarith

Recent WWF field surveys in Mondulkiri's Phnom Prich Wildlife Sanctuary confirmed an estimated population of 275 groups, or possibly more than 1000 individuals, of Yellow-cheeked Crested Gibbon. Suitable habitats of Phnom Prich WS represent the northern limit of typical yellow-cheeked gibbon distribution within the Landscape, as its northern neighbour, Lumphat Wildlife Sanctuary in Ratanakiri province, proved unoccupied by the species.

Lack of accurate estimate of the gibbon population in northern Mondulkiri had led the Eastern Plains Landscape Project to carry out surveys between January and April 2008. According to scientists, the study confirms the 2nd largest protected area population of gibbon, compared to more than 800 groups within Seima Biodiversity Conservation Area, adjacent to PPWS to the south, and the only other site in the landscape harbouring the same species.

"The survey indicated the global significance of the Phnom Prich Wildlife Sanctuary for this endangered primate and suggests that more conservation efforts must be focused in this last dry forest wilderness of the country," said Mr Seng Teak, Country Director. The findings, he added, give conservationists a better perspective on how to preserve this gibbon population at landscape scale.

In the recently updated IUCN Red List, the Yellow-cheeked Gibbon has been uplisted to 'Endangered' due to its declining numbers and increased pressures from exploitation. Less than eight years ago, the species was classified as Globally threatened-Vulnerable.



Dry forest habitat. © Nick Cox

© Sak Ousaphea

Female Yellow-cheeked Gibbon at Cambodia's Phnom Tamao zoo.

The primate population is decimated mainly by habitat loss and fragmentation, caused by illegal logging, shifting cultivation and land encroachment; and by hunting for food, use in traditional medicine and trade.

The new classification makes the species one of sixteen IUCN globally endangered mammal species within Cambodia and it must be regarded as of high conservation significance within the country.

"This is the unique chance for conservationists with the Cambodian government and NGO sector to mobilise concerted efforts into protecting the primate and its habitat," said Mr Craig Bruce, Eastern Plains Landscape Project Manager.

The survey method was designed using 60 listening posts distributed randomly across Phnom Prich WS. During data collection six survey teams, each comprising two Ministry of the Environment rangers trained in the beginning of the year by WWF's Field Research Team Leader Mr Phan Channa, navigated to pre-designated listening posts using hand-help GPS, and camped over 1000 meters away from the listening posts to avoid disturbing the gibbons.

Dr Thomas Gray, Landscape Biodiversity Monitoring Advisor, describes that listening post surveys involve the rangers describing all gibbon song bouts over 3 consecutive mornings between 05:00 am and 12:00 noon. "For each song bout, the teams described compass bearing direction and estimated distance to the group, time of starting and ending of all song bouts, and type of song," he said.

The range of the Yellow-cheeked Gibbon has been described as encompassing northeastern Cambodia, southern Vietnam and southern Laos. However, recent studies have suggested that gibbon populations in Ratanakiri and Stung Treng provinces, and southern Laos, may not belong to the typical Yellow-cheeked Gibbon type. This could make the populations of PPWS and Seima Biodiversity Conservation Area especially important, as the last refuges in Cambodia of this type of gibbon.

WWF and the government partner plan to repeat the surveys every 2-3 years to be able to observe changes in population and distribution of the species and to focus protection activities.

for a living planet

Pure and sweet harmony of Mondulkiri Wild Honey

Text by Tep Asnarith

Mondulkiri Wild Honey is the brand name of pure and sweet honey product achieved by the hard work of indigenous Phnong community-run honey enterprise. Motivated by the commitment to safeguarding their surrounding forest resource and biodiversity, communities in Krang Teh and Pou Chrey are operating non-timber forest product based livelihoods project they started in 2007 with supports from WWF and partners.

There are currently 46 households members, all honey collectors, with the purpose to promote sustainable harvesting practice that respects biodiversity and maintain intimate relationship and harmony with the forests.

After the harvest period of March-May 2008 with the collection of 1000 litres, 400 litres were packaged, with support from Bethany Cares. Later in June, the *Mondulkiri Wild Honey* was for the first time placed into market of ten shops and NGO-based selling outlets in both Mondulkiri province and Phnom Penh. Also, many environmental and commercial events provided the chance to promote this new product.

In December, the communities sold around US$799 at a four-day Cambodian nation-wide trade fair, annually organised to promote Khmer products.

"It was a good opportunity to convey the message about the connection between forest conservation and the community livelihoods," said Mrs Amy Maling, Community Extension Technical Advisor with the WWF's Eastern Plains Landscape Project (EPL).

Trees where they collect honey are tagged and mapping of the collection areas is carried out. © Amy Maling

"Honey is one of the forest-based resources that have the potential for generating income among the Phnong communities in Mondulkiri," she added.

The development of the honey enterprise also brings change into the situation of local honey trade. Traditionally, fresh wild honey is sold only to local buyers who offer a low and unstable price. In 2007, for example, honey was sold for 10 000 riel (around US$ 2.5) per litre. But with the increased market in the province and capital of Phnom Penh, the Phnong collectors sold an average of 18 000 riel (around US$ 4.5) per litre in 2008.

Harvesting honey with proper method can result in increased production. Pich Phony, a Phnong community member of Krang Teh, has completed a series of trainings for proper honey collection techniques and enjoyed the good result he witnessed himself.

"Rather than just collect one lot of honey from a nest, with the new technique I can collect up to 3 times during a 25-day period. This is very important to me because it gives me more income to support my family," he said. Before, he added, the price of honey was unfortunately not stable because it depended on brokers to set it. The price for selling in the village was 10 000 to 12 000 Riel per litre, but if sold directly to tourists, the price could reach as high as between 18 000 to 20 000 Riel per litre.

The honey collectors are now gathering information about the number of honeybee nests, a crucial step for the management of this NTFP. They will then maintain a database with information about name of tree, number of honeycombs in each tree, and amount of honey collected, the number of honeycomb harvested, and the number of times they harvested from the same honeycomb.

"The information will be used for monitoring population of honeybees and the volume of honey available," Mrs Amy said.

The sustainable use and importance of forest resources are promoted by the WWF's community extension team among 16 local villages living in and around protected areas: Mondulkiri Protected Forest and Phnom Prich Wildlife Sanctuary. The objective is to encourage them to protect their

surrounding natural resources for the benefits of current and next generations.

Increased awareness of local people about the environment and their involvement in livelihood activities and natural resources management are crucial contribution to preserving the Cambodia's unique Dry Forests wilderness.

Using sustainable technique for collecting honey has been perceived among villagers; they wait for honey combs to mature before harvesting and only collect the part that contains honey leaving bees to produce more.

"Local people wisely ensure that trees are maintained as food for bees, are more careful with not causing any fire while in the forests and take part in reducing hunting pressures on wild animals," Mrs Amy said.

For the community people, the joy of receiving concrete benefits from the livelihoods project, in which they are directly involved, increases their ownership of the resources they depend on.

The communities receive capacity building on planning and marketing techniques. They are trained to effectively deal with selling outlets in Mondulkiri and properly manage the honey product. WWF and NTFP-EP will continue supporting the deals with outlets in Phnom Penh.

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WWF initiative aims to ensure tigers survive in Cambodia's Eastern Plains Landscape

Text by Tep Asnarith

This female Indochinese tiger was captured on camera within Mondulkiri Protected Forest in November 2007, the second camera-trap photo of tiger since WWF and the Cambodian government began working in the Eastern Plains Landscape 8 years ago. Within the Eastern Plains Dry Forests, the number of tigers has diminished mainly due to the intense poaching of tiger and its prey, as well as forest disturbance and clearing.

According to a recent study conducted jointly by WWF and WCS, tigers currently occupy just 7 percent of their historical range across Asia; in the past decade alone the area occupied by tigers has decreased by 41 percent. WWF, together with its Cambodian government and NGOs partners have embarked on a landscape-scale tiger conservation initiative, which aims at securing critical Tiger habitat and increasing its prey populations.

"We don't know for sure how many tigers there are in the landscape or how many were there in the past," said Dr Thomas Gray, WWF Landscape Biodiversity Monitoring Advisor. However, he added, "the type of forest habitat provides significant potential to increase the density of tigers, even though the density is currently very low."

Mondulkiri Protected Forest together with the adjacent Phnom Prich Wildlife Sanctuary forms one of the country's globally important conservation landscapes. The confirmation of continued tiger presence within the landscape, through sign-surveys and camera trapping, increases the hope of national and international conservationists and encourages greater effort to recover the dwindling populations of this iconic and critically endangered animal.

"The country's last remaining Dry Forests wilderness is still largely intact and if it is well protected, the tiger population can be recovered," said Mr Craig Bruce, Eastern Plains Landscape Project Manager.

Aerial view of dry forests landscape
© Nick Cox

The tiger initiative focuses its work on three protected areas in Mondulkiri province – Mondulkiri Protected Forest, Phnom Prich Wildlife Sanctuary and Lomphat Wildlife Sanctuary – together covering an area of approximately 8500 km^2. WWF is currently working in Mondulkiri Protected Forest and Phnom Prich Wildlife Sanctuary to enable a measurable increase in populations of tiger and prey through increasing patrol effort, ensuring no land encroachment within the corridor between the protected areas, and monitoring populations of tiger and prey such as banteng, gaur, eld's deer and wild pigs. This Eastern Plains tiger initiative is also coordinating survey efforts with WCS in Seima Biodiversity Conservation Area, in southern Mondulkiri.

"Right now, our monitoring team is undertaking camera-trapping in areas where tiger signs are reported and collecting scat (tiger and tiger prey droppings) for DNA analysis. These should allow us to make an estimate of the minimum number of tiger within the landscape," Dr Gray said.

For conservationists, the key challenges are to find ways to reduce international trade in tiger parts and to establish and protect the integrity of large conservation landscapes where tiger populations can thrive. According to Mr Bruce, habitat linkages, especially through restoration of good tiger habitat corridors, can also increase the total amount of tiger habitat available, and this is vital to ensure the best possible conditions for recovering and then conserving the tiger population.

Tiger Conservation Project

Conservation Methodologies

1/ Tiger and prey monitoring
The following methods are important to quantitatively show improvements in the situation over the duration of the project:

- Occupancy survey
- Camera-trapping
- DNA analysis
- Ungulate transects

2/ Tiger patrol guards
The project will support 4 patrol teams; each consisting of eight people per team dedicated to the protection of tigers, tiger prey, and forest habitat.

The primary aim of the tiger patrol guards will be to ensure no hunting in the core zones of each protected area as well as no encroachment in the corridors between the core zones.

3/ Mobile tiger patrol
A fifth Tiger Patrol team will be operated out of the provincial town. This will be a mobile team consisting of rangers and police and will act in three ways: a) as a rapid deployment force, b) as a supplement to other patrol teams to bolster operations; c) as an anti-trade force.

Bird nest protection in Northern Cambodia

Text by Kek Naratevy

One of the findings of the WWF Mekong Biodiversity surveys undertaken in 2006/7 was the identification of 4 threatened bird species for priority conservation intervention: White-shouldered Ibis, River Tern, Greater Adjutant and Lesser Adjutant. These species were found to be breeding in the "Central Section" of the Mekong between Kratie and Stung Treng towns, an area that the WWF surveys identified to be of high biodiversity value. Threats to the birds, including habitat loss and disturbance, as well as hunting, were also identified by the survey report.

As a result of these findings WWF Cambodia, with funding from LMP, initiated in mid-November 2008 a bird nest protection project in collaboration with the Forestry Administration to protect the nests of these 4 priority species. The key objectives of the project are to raise awareness amongst local government and communities of the importance of conserving these threatened species and their habitat; and to protect their nests through a community bird nest protection programme that compensates ($1 a day) local community members for locating and protecting the nests from predators and hunters.

"This is just our first step. At the beginning of the project we went to educate the local authority and community about the importance of bird nest conservation and to discuss with them their willingness to participate as protectors of bird nests. They were happy to help. They agreed to help search for bird nests and report them to the project," said Mr Sok Ko, WWF's Bird Nest Protection Officer.

As of now, there are 10 bird nests that are under community protection in Kratie province: 9 Lesser Adjutant nests and 1 White-shoulder Ibis nest. The project provides awareness and compensation to the local community to act as protectors of wildlife with the hope they will understand more about the importance of conservation and the benefits it can provide.

"If we can protect bird nests and the number of birds increases, this site will become a potential area for ecotourism. It will create more jobs for the community," Mr Ko said.

White-shoulder Ibis
© Sok Ko / WWF Cambodia

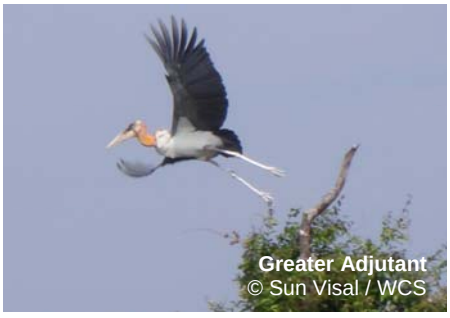
The Central Section, where these birds have been found breeding, is an attractive area that has been relatively unaffected by human development seen elsewhere on the Mekong. As a result, the natural habitat is relatively intact and the site is important for an array of wildlife species. One of the bird species targeted by WWF for conservation is the White-shouldered Ibis, a critically endangered species (with just a few hundred left in the world) for which the "Central Section" of the Mekong is believed to be one of three most important remaining habitats. The presence of the White-shoulder Ibis as well as the beauty of the surroundings could act as an important pull for tourists in the future.

Such is the international concern for the conservation of the White-shoulder Ibis that WWF signed in December 2008 a MoU with the University of East Anglia (UK) to co-operate on research and the conservation of this species.

WWF Cambodia is currently sourcing funding from Central Ecosystem Partnership Fund to establish a project for the conservation management of the Central Section in collaboration with Government and community stakeholders. If successful, the bird nest protection project would be incorporated within this larger project as a model for collaborative community based conservation.

River Tern
© Sok Ko / WWF Cambodia

Lesser Adjutant
© Sok Ko / WWF Cambodia



Greater Adjutant
© Sun Visal / WCS

Trans-boundary talks to improve Mekong aquatic resources conservation between Cambodia-Laos

Text by Tep Asnarith

Government agencies and communities from Cambodia's Stung Treng and Laos's Champasak provinces met twice in 2008 at the trans-boundary section of the Mekong River to share experiences and discuss issues related to the management and conservation of local aquatic resources. These meetings were facilitated as a result of collaboration between WWF Cambodia and Laos offices and are part of the consultation phase of a WWF Mekong trans-boundary pool conservation plan with the objective of community-based trans-boundary co-management of aquatic resources.

These resources include the critically endangered Mekong Irrawaddy Dolphin. This shy mammal is held in esteem by Mekong river communities and is viewed as an important symbol of the health of the Mekong by stakeholders and scientists alike. However, due to threats such as historical hunting, illegal fishing activities and accidental drowning in gill nets and uncontrolled trans-boundary dolphin eco-tourism activities, it is now restricted to just a 190 km stretch of the river in northern Cambodia between Kratie and the Laos border, with an estimated population abundance of between just 66-86 dolphins (Dove et.al. 2008*).

As a result WWF and government partners in both countries are focusing their conservation efforts around nine important dolphin deep pool habitats, one of the most important of which lies across the Cambodia-Laos border.

© Phay Somany / WWF Cambodia

Cambodian community representatives from Steung Treng province list down issues related to freshwater resources management during a group discussion at the trans-boundary conservation workshop.

These beautiful dolphins were photographed by the Cambodian Mekong Dolphin Conservation team in Steung Treng deep pool area during the project's dolphin population abundance research in November 2007. This freshwater mammal displays interesting playful natural behaviour in areas where they are less disturbed.

"To reach an agreement on community-based co-management at this trans-boundary area, it is very important for both local authorities and communities from both sides to explore and understand the problems that they face and share experiences used to date for sustainably managing their aquatic resources," said Mr Richard Zanre, WWF Freshwater Program Manager.

"During discussions, communities identified that local aquatic resource use practices and problems faced by both sides were similar, and reached agreement on the threats to the survival of the Irrawaddy Dolphin," said Mr Phay Somany, Senior Officer with the Cambodian Mekong Dolphin Conservation Project (CMDCP).

Supported by WWF, the trans-boundary meetings and their outputs should enhance the collaboration between authorities and villagers on both sides of the border and assist the development and implementation of effective Mekong trans-boundary area management

While the transboundary stakeholders are to meet again soon, a critical next step will be to focus on tangible discussions over trans-boundary co-management planning, which takes into account feasible actions for the eventual establishment of a co-management committee to design, implement and monitor a transboundary management plan.

*Dove, V., Dove, D., Trujillo, F. and Zanre, R. 2008. Abundance estimation of the Mekong Irrawaddy dolphin *Orcaella Brevirostris* based on mark and recapture analysis of photo-identified individuals. WWF Cambodia Technical Report.

Where the awareness raising is the key

To reduce pressures and threats on Dolphins, the CMDCP in collaboration with Wildlife Conservation Society and the government's Fishery Administration have been working for three years now with the communities adjacent to the dolphin habitats in Kratie and Steung Treng provinces to raise awareness of the importance of the Mekong Dolphin and conservation measures that are necessary for safeguarding this species for the benefits of the river biodiversity and livelihoods of local communities. Villages and schools neighboring to the dolphin habitats are targeted for regular workshops in dolphin conservation issues. The project's awareness methodologies include training of teachers and integration of monks into environmental education.

More community-based ecotourism projects ready to go in Mondulkiri

Text by Kek Naratevy

Imagine a relaxing vacation in the wilderness of Mondulkiri province, enjoying nature in Cambodia's unique Eastern Plains while spending the night in a typical Khmer-style homestay. From the middle of 2009, this is the hope for several villages in Mondulkiri province. Tourists will have the opportunity to learn about the indigenous culture and traditions of Phnong communities in nearby villages.

WWF, in collaboration with provincial authorities, is implementing this new ecotourism project as part of a larger strategy to conserve the globally important Dry Forests ecosystems within Mondulkiri Protected Forest, and other protected areas in the Eastern Plains Landscape of Northeast Cambodia. This will be an experience different from the typical temple tour in Siem Reap that the vast majority of Cambodia's visitors currently enjoy - but could well make a very good addition to the established tourist trail.

Ride on domestic elephant during the dry season in December inside the dry forest landscape, Mondulkiri province.

Eco-based outdoor activities such as biking, camping, animals tracking, bird-watching have already been thought out to be on the menu for those who will make their way to experience their first spectacular view of the country's unique green nature rarely seen elsewhere.

With its open canopy and grassy understorey, the dry forest landscape gives a different view from any other types of forest you have already seen: large tropical hardwood trees that are long-lived and can grow up to 30 meters high.

It is home to significant large mammals such as Tiger, Gaur, Banteng, Wild Water Buffalo, Asian Elephant, Leopard, as well as significant bird species including Great Hornbill, Green Peafowl, Sirus Crane, and Vultures.

"The dry forest in eastern Cambodia remains relatively intact if compared with other parts of the lower Mekong region including Laos, Thailand and Vietnam," said Mr Craig Bruce, WWF's Eastern Plains Landscape Project (EPLP) Manager.

Due to reduced pressures and threats on animals, sighting them in Cambodia's Dry Forests has become a reality even during daytime. WWF field rangers often record the presence of animals by direct sighting after following their tracks.

How to organise package tour to the villages, what are the options and arrangements needed? These are the questions the project team needs to discuss with tour operators who are interested to take part in this first forest based ecotourism experience.

"One of the ideas would be to make tourists discover the magnificent dry forest and lives in it as part of an overnight stay package. It includes food, accommodation and two-way travelling from and to Sen Monorom, town of Mondulkiri province," said Ms Olga van den Pol, Ecotourism Team Leader with EPLP.

"Tourists have to pay extra charge for other services at the site, for example, if they would like be guided for bird watching or animals tracking."

As part of the pilot plan, facilities include Khmer-style homestay with four big rooms, proper lavatories and water for shower and cleaning, and a restaurant serving typical Khmer and Phnong foods. Selected villagers will receive training for standard cooking.

"The training will cover cooking of a number of foods and take into account the standard of hygienic practice," said Proeung Sam On, Ecotourism Assistant with EPLP.

In cooperation with the Cambodia Community Based Ecotourism Network, the project will deliver course on tourist guiding skill for recruited villagers who have good knowledge about the wilderness and species.

The involvement of local community in the ecotourism process is a WWF strategy to improve local livelihoods while also promoting the value of the Cambodia's forest and its unique biodiversity.

"It is the WWF vision to see Cambodian people live in harmony with nature upon resources of which they depend sustainably," Mr Bruce said.

Successful WWF agricultural and land use planning initiative in Mondulkiri

Text by Lim Seang Heng

Cambodia is an agricultural country in which nearly 80% of the population are farmers. With its low-cost labour and relative abundance of land, Cambodia has also seen a proliferation of large-scale land concessions to develop plantations for agricultural products like cassava, sugarcane, rubber, and pulpwood. Over 1 million hectares of economic land concessions have already been issued, and this has created significant environmental and social challenges for governments and communities.

In mid-2007, WWF launched an Integrated Landscape Development Planning project, which involved collaborating with government agencies to produce a detailed agricultural suitability zoning map for Pichreada District, Mondulkiri Province.

"Our objective was to create a map to help farmers better understand which land is most suitable for different crops," said Mr Phan Kamnap, Project Manager.

"The map also helps to provide the district and commune authorities with better information for managing future agricultural expansion in a sustainable way," he added.

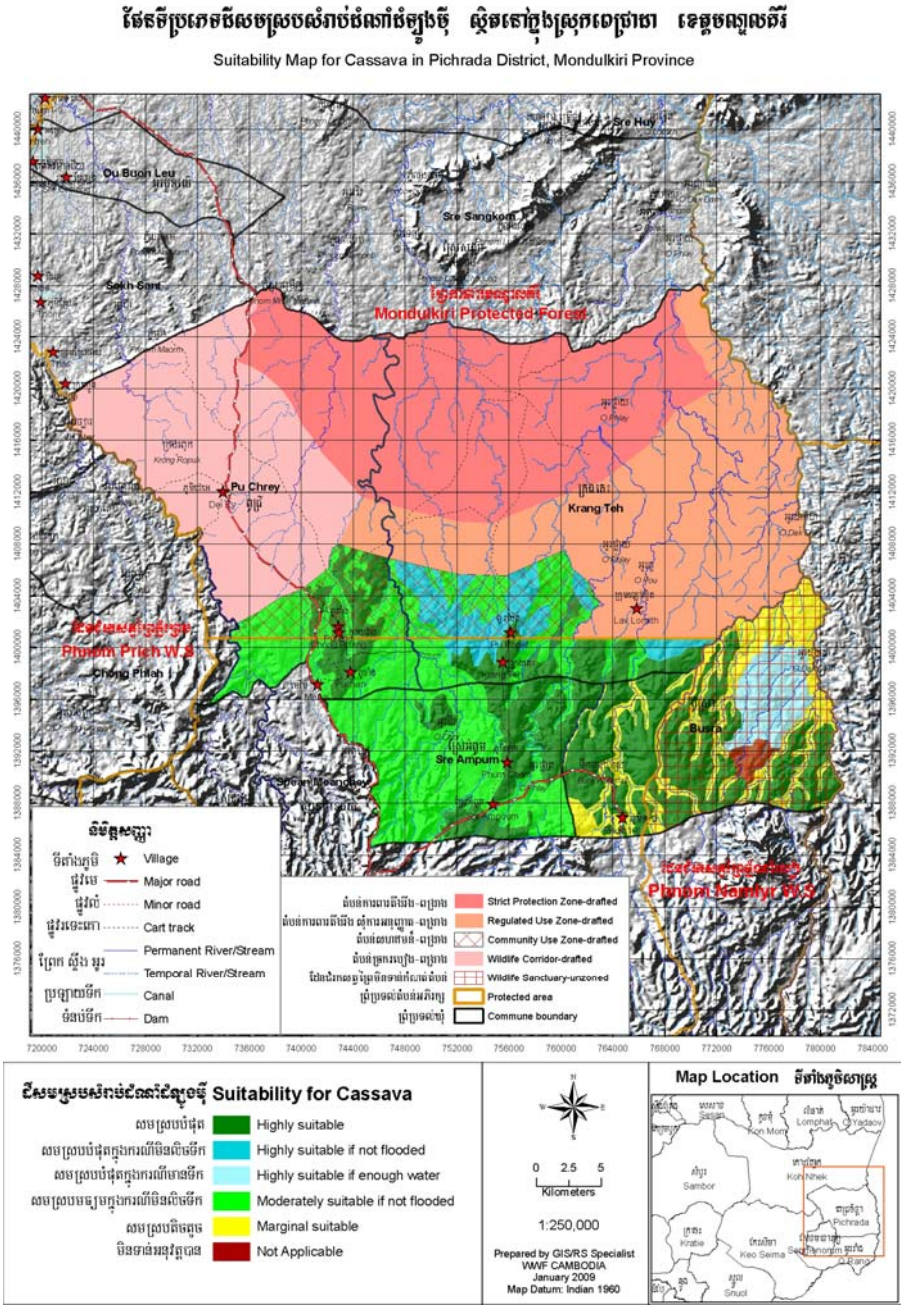
Local communities in Pichreada often plant crops that are not suitable for a specific piece of land. As a result, agricultural output is low and there is greater pressure to expand cropland into other areas such as protected forest.

There are similar problems with regard to the allocation of economic land concessions for large-scale agriculture in areas which are not suitable.

The project conducted a detailed land suitability analysis that examined the physical, social, economic and environmental issues associated with different agricultural uses.

"The analysis takes into account various physical attributes like soil type, slope and topography, temperature, and moisture," Mr Kamnap said.

In January 2009, the project team completed its land suitability analysis for agricultural development in Pichreada District. Maps were produced showing areas that are suitable for different agricultural crops, and all of these outputs were presented and discussed with all of the key stakeholders at a major provincial workshop.



WWF will continue to work closely with provincial and communal authorities to ensure that future land concessions are allocated and managed in a way that avoids conflicts with local communities, as well as negative impacts on ecological functions and natural habitats.

WWF has been invited to work in four more districts in Mondulkiri during the coming year. Also, neighbouring Kratie province, which faces many of the same challenges in terms of land-use planning and agricultural development, has also expressed interest in working on a similar process with WWF.

Improving livelihoods through Community Protected Area management

Text by Son Bora and Samrang Dyvicheth

Almost all rural Cambodians use forest resources for construction materials, cooking fuels and foodstuffs. For the poorest members of the rural community, the forest acts as a socio-economic safety net, providing a range of products they could not otherwise afford.

The danger with such indiscriminate use is that natural resources can quickly be destroyed by the very people who most depend on them for their long term survival.

In order to combat this problem, the concept of Community Protected Area (CPA) is established to give communities a say in how they manage the forest within the overall confines of established sustainable management practices.

"WWF works with government authorities to assist local communities to establish and sustainably manage Community Protected Areas in Cambodia's Eastern Plains, Mondulkiri province," said Mr Seng Teak, WWF Cambodia Country Director.

A Community Protected Area is an area of land within, or around a conservation area, which has been set aside for the community to manage sustainably.

"We assisted local communities in Sre Thom village to establish a 3,000 hectare Community Protected Area and a 1,700 hectare site for Khnheng village, both within Phnom Prich Wildlife Sanctuary, which is one of the major conservation sites under co-management of WWF and Cambodian government," Mr Teak said.

After much consultation with the community and government at commune and district levels, the boundaries have been marked and regulations and agreements drafted.

There are around 280 families who have registered to become Community Protected Area members, which in Khnheng accounts for all families in the village.

These families have been invited to get involved in forming a five-year management plan for their respective area and will be responsible for its long term sustainable management.

Villagers mark the boundaries of their Community Protected Area, with the occasional help of a friendly elephant. © Son Bora / WWF Cambodia

Sre Thom Community Protected Area committee receiving financial training. © Son Bora / WWF Cambodia

Building capacity within communities to manage these Community Protected Area sites in an appropriate manner is critical to the on-going success of WWF projects at Phnom Prich Wildlife Sanctuary (PPWS).

For Mrs Sok Sarin, Chief of the CPA committee in Sre Thom, the making of a CPA means her children will be able to support their livelihoods by harvesting forest resources long into the future.

Local communities are able to utilize the resources within the Community Protected Area, while at the same time reducing the pressure on the core conservation area of PPWS.

On March 12th 2009, communities, government authorities and WWF will celebrate the Proclamation of the two Community Protected Areas, Sre Thom and Khnheng, in Phnom Prich Wildlife Sanctuary, Mondulkiri province.

"The event provides the opportunity to promote the country's unique value of forest resource and biodiversity through promotion of the community-based natural resource management," Mr Teak said.

Projects underway for the establishment of community-based natural resource management include two Community Protected Areas in PPWS and five other Community Protected Forests in Mondulkiri Protected Forest, the other co-management conservation site of WWF and its government partner. These current projects in all cover 1/4 of the entire population of Mondulkiri province.

Dry forests in supporting indigenous livelihoods

Text by Khou Eang Hourt

Support of indigenous livelihoods is an important part of WWF Cambodia's approach to ensuring the long term protection of natural areas. A study has identified ten sustainably harvestable non timber forest products (NTFPs) which can contribute significantly to the well-being of local communities.

Deciduous forests cover large areas of WWF's main protected sites, Phnom Prich Wildlife Sanctuary and Mondulkiri Protected Forest in Cambodia's Eastern Plains. Also present are patches of other forest types such as evergreen forests, semi-evergreen forests, mixed deciduous forests, bamboo forests, grassland areas and gallery forests.

This combination forms a biodiversity richness which provides invaluable sources of forest products for forest dwellers. A recent study at Sre Thom village in Mondulkiri province identified the following products and their role in supporting local livelihoods in an attempt to achieve their more sustainable harvest and use.

Wild edible leaves. Eighteen plant species have edible leaves and thus used for vegetables. Young shoots growing during the early rainy season are collected from late March to early June and others like bamboo shoots are collected in the rainy season, while rattan palm hearts are collected year round.

Mushroom. Between April and May, four to five species of wild edible mushrooms are collected from deciduous forests and nearby village for food.

Wild fruits. Fourteen edible fruit producing species inhabit different forest types and are collected at different times of the year.

Medicinal plant. Fruits, barks, roots, woods, exudations, and leaves of medicinal plants are collected for trade, disease treatment and food.

Traditional wine recipes. Leaves of wild peppers are traditionally collected in gallery forests all year round to make wine.

Ornamental plants. Orchids are collected all year round in semi-evergreen and deciduous forests for sale at local markets. Whole plants fetching between 1000-1500 riel ($0.25 -0.4US) per kilogram are taken from the tree trunks.

Honey is collected from many forest types for sale outside the village, with surprisingly little used within the household. Honey is one of the major cash income generating NTFPs for forest dwellers and between February and March, around one third of villagers collect it.

Solid and liquid resin is extensively collected by many households for commercial trade and is a major source of income for indigenous people. Solid resin producing species, Phachoek and Reang, and liquid resin producing species, Trach, naturally dominate in deciduous dipterocarp forest. Another resin producing species, Chheuteal Toek, is present in semi-evergreen forest and gallery forests. All resin is processed into torches for lighting at night.

Construction and basketry materials. Certain plant species like rattans, bamboos, thatches and small trees provide raw materials for construction and basketry. These plants occur through the various forest types and are opportunistically collected by households.

Under-ground edible parts. Wild yams are collected in the dry season and used instead of rice or snacks. Rhizomes of ginger are collected all year round and used as a spice to flavour soup.

The wide range of NTFPs found in protected areas provide evidence of the broad ecological diversity found in these protected areas, as well as the importance of protecting them to support the livelihoods of local communities. This is in addition to the 'environmental service' also provided to local communities in terms of flood control in the rainy season, ground water regulation, climate moderation and eco-tourism services.

Two faces of a beautiful landscape

Dry season

The dry forest is brown, open, very dry and extremely hot. Almost all the tall trees are leafless, leaving behind trunks with branches which make them look like dead trees, although they are only dormant. Ground plants like grasses, sedges, small bamboos and non woody plants die out. Some small plants like epiphytes do not die, but become dormant. Small ponds and streams dry out leaving no water, except in small waterholes. Forest fire frequently occurs in this season, burning dry debris or dead leaf litter on the ground. The burning is more often than not caused by humans. Forest fire clears the ground making it easy to walk through the forest. However, when walking through it, you will quickly feel very hot, sweaty, and tired. Occasionally, you will meet termite hills, or a patch of evergreen trees or shrubs confined to wet ground, where you usually want to take rest and hesitate to continue the trip. It is difficult to see wildlife other than a few birds. As a tourist you might not be interested in this hot dry landscape and may not want to return to it again, but this is the season when organisations like WWF can do the majority of its fieldwork, when staff can freely move around the forest.

Wet season

The wet season bring with it dramatic changes in the appearance of the forest, with a hundred shades of green stretching as far as the eye can see. The tree canopy is full of leaves and sometimes multi-coloured flowers, and the trunks are partly covered by mosses, lichens, and epiphytes including orchids. Many ground plants grow up with beautiful colour and fragrant flowers, densely strewn over the forest floor. The ground is usually wet and in some parts, deep mud makes passage by anything but elephant a treachourous undertaking. All ponds and streams are full of water, often clear, clean water with aquatic plants and sometimes ornamented by beautiful flowers. Many insects like ants, butterflies and other insects appear throughout the forests in search of food. Many birds are looking for fruits and giving their songs like music. If walking through a more remote part of the forest, we occasionally come across lizards, turtles and tracks of large mammals like banteng, gaur, deer, elephant, wild dog, or even big cats and bears. You occasionally find fruits that you can eat and feel relaxed. Such great sights will stay in your mind for ever and always remind you to go back.

Strengthen the rattan industry in Cambodia

Text by Kek Naratevy

In Cambodia as well as neighboring countries such as Laos and Vietnam, the rattan industry has the potential to become a crucial factor for the national economic growth, especially through its contribution to the poverty alleviation of rural communities. However, WWF and partners discover that the rural poor communities are often the most heavily impacted by the consequences of continuing degradation on rattan, one of the important non-timber forest products they depend on for livelihoods.

Fast growing economies elsewhere in the region are motivating rapid expansion of processing activities leading demand for rattan resources to a level far to be sustainable.

"We discover that most of the small productions in the province are wasting lots of rattan resource during the production process," said Mr Ou Ratanak, Rattan Project Manager with WWF Cambodia Program.

He continued that there was an urgent need to develop a model of sustainable production that can support continuous growth of Rattan in the nature while maintaining seasonal harvesting and supply for production.

The project also identified that Cambodian rattan processors and exporters are not familiar with using the environmentally-friendly processing techniques and lack of understanding about international market requirements. Moreover, the lack of creative design skill to diversify products refrains the chance of being qualified to compete in international market. About 90% of their finished products currently do not comply with the required quality standard.

To cope with these issues, the project currently networks with 20 Small and Medium Enterprises (SME) and will coordinate with Cambodian ministries of Commerce and Agriculture, Forestry and Fisheries to have their activities legalized with a proper license for each enterprise.

The network brings together a group of rattan processors from different parts of the country who will share knowledge, ideas and experience related to rattan resource, production processes and market, and help each other improve processing skills.

One of the network members, Mrs Kuy Meng, owner of a medium rattan enterprise in Preah Sihanouk province, will meet up with her network colleagues, members of the rattan community in Prek Thnot, for the first time in late February when she will share knowledge on rattan creative design. The training conducted during two weeks will cover skills to produce a variety of products such as sofa, chair, bookshelf, table and basket.

Based on her experience, a set, well designed and proven with quality, comprising of one table, one sofa and two chairs for the living room area could reach a price as high as 400 US dollars in towns such as Sihanoukville and Phnom Penh. But to match with the standard requirements, there are other aspects to be considered besides the attractiveness of physical output. These include efficient use of rattan resource before and during processing, proper storage at all levels of supply chain and applied up-to-date manufacturing techniques.

"One of the project objectives is to engage these SMEs in Cleaner Production, which aims at introducing proper techniques at the processing level and a system of quality assurance," said Mr Thibault Ledecq, Regional Rattan Program Manager.

WWF works with Vietnam Cleaner Production Centre (Institute for Environmental Science and Technology based in Hanoi) to target rattan processors with training that helps highlight the current bad practice for handling their production: wasteful use of rattan when processing, poor grading and storing as well as chemicals use, which has negative impacts on the environment and the quality of rattan products.

After three years helping local communities in Cambodia and Laos apply the model of sustainable rattan management with community-based organizational structure, as well as set up community-scale processing groups, the Rattan Project with support from the European Commission and IKEA now steps into developing the rattan industry in Cambodia, Laos and Vietnam by establishing a system of sustainable rattan production when continuing to promote sustainable rattan harvesting.

The established network of Cambodian rattan processors is a way to begin with to help the Cambodia's rattan industry grow stronger and more efficiently.
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WWF Cambodia's mission is to ensure that there will be strong participation and support from all peoples to conserve the country's rich biological diversity. Through the encouragement of sustainable use of natural resources, WWF Cambodia will promote new opportunities for the benefit of all people, enhancing local livelihoods and contributing to poverty reduction in the Kingdom of Cambodia.

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