

Eastern Plains Landscape in numbers:

Nearly 6,000 square kilometers

of protected areas in Cambodia supported by WWF (Srepok Wildlife Sanctuary and Phnom Prich Wildlife Sanctuary)

Over 25,000

local community members of 8 ethnic groups living in and around the protected areas in the Eastern Plains Landscape depend on forest



One of the world's 200

most biologically important areas. It is one of the largest stretches of continuous dry and semi evergreen forest in Southeast Asia

Banteng

The world's largest banteng population occurs in the Eastern Plains Landscape with number estimates at 2700-5700 individuals

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Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

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WWF. A summary of the significant species living within the PPWS

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PROFILE

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**PHNOM PRICH
WILDLIFE SANCTUARY**

PREFACE FROM THE MINISTER OF ENVIRONMENT

On behalf of the Ministry of Environment, I would like to express my profound respect and sincere gratitude to Samdech Akka Moha Sena Padei Techo HUN SEN, Prime Minister of the Kingdom of Cambodia, for his full support and strong commitment to strengthen the contribution of biodiversity conservation and sustainable development. The Phnom Prich Wildlife Profile is a comprehensive document for biodiversity conservation and management in Cambodia and represents an important milestone for umbrella species in Cambodia for the future under the charismatic leadership of Samdech Akka Moha Sena Padei Techo HUN SEN, the Prime Minister of the Kingdom of Cambodia.

I would like to express gratitude and appreciation to Excellencies, ladies and gentlemen from line departments, NGOs, the private sector, and development partners for the good cooperation in the preparation and completion of this important wildlife profile.

The Ministry of Environment of the Royal Government of Cambodia works across both the Phnom Prich Wildlife Sanctuary (PPWS) and the Srepok Wildlife Sanctuary within the Eastern Plains Landscape of Cambodia. Through collaborations with WWF and other conservation NGOs, the Ministry is working to protect the forests and the wildlife that live there for generations to come. This book shows some of those wildlife and local communities that benefit from this work. The Eastern Plains Landscape is of vital value for Cambodia and a stronghold for the region with key species such as the Banteng and the Giant Ibis, Cambodia's national bird, residing in it. Yet, the Landscape is facing pressing threats which need to be mitigated as soon as possible.

This book is a summary of the significant species living within the Phnom Prich Wildlife Sanctuary for the General Department of Administration for Nature Conservation and Protection, Ministry of Environment by WWF-Cambodia. We hope it can serve to raise awareness on the majesty of the Sanctuary and its importance in the world. It was made possible thanks to the Ministry of Environment and WWF-Cambodia and with the generous funding and support from USAID through the Supporting Forests and Biodiversity (SFB) Project.

I would like to take this opportunity to express my deep appreciation to line departments and agencies, development partners and experts for their valuable inputs, assistance and active participation in the development process of this wildlife profile in a timely and effective manner.



SAY SAMAL

Minister of Environment

Phnom Penh, 10 June 2016

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PREFACE FOR WWF-CAMBODIA COUNTRY DIRECTOR

Within Cambodia the Eastern Plains Landscape consists of approximately 1,300km² of connected protected areas. The EPL is also recognized for its global importance, as it falls within two Ecoregions from WWF's Global 200 project: the Annamite range moist forests and the Lower Mekong dry forests; the southern, evergreen parts of the EPL lie within the South Viet Nam / Cambodia lowlands 'Endemic Bird Area', and there are four 'Important Bird Areas' within the landscape. As part of the EPL, the Phnom Prich Wildlife Sanctuary is of vital importance for the richness of its natural resources and biodiversity. But they are under increasing pressure from poaching, illegal logging, land-clearance, and unsustainable activities. WWF-Cambodia has been working since 2004 in the PPWS, supporting the Ministry of Environment in monitoring species, protecting the Sanctuary and collaborating with local indigenous communities in reaching legal status and for their members to have sustainable alternative livelihoods, ensuring that humans live in harmony with nature. WWF-Cambodia is currently providing technical support to the Ministry of Environment for the development of the PPWS Management Plan (2016-2021), and will continue to support its implementation.

WWF-Cambodia is thankful to the Ministry of Environment for years of close partnership and collaboration, which contribute to the safeguard of the protected areas for generations to come. As part of the USAID-funded Supporting Forests and Biodiversity Project, WWF-Cambodia, in collaboration with the Ministry of Environment, has produced the PPWS Wildlife Profile. This Profile allows the general public to discover the beauty and majesty of the Sanctuary, while understanding the threats to it. It aims at raising nationwide awareness on the importance of the great biodiversity of PPWS in Cambodia.

We hope, through this Profile, to engage more people in the respect of biodiversity and its protection.



CHHITH SAM ATH

**Country Director of
WWF-Cambodia**

Phnom Penh, 10 June 2016

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This book is a summary of the significant species living within the Phnom Prich Wildlife Sanctuary (PPWS) and was made possible thanks to the Ministry of Environment and WWF-Cambodia and with the generous funding and support from USAID through the Supporting Forests and Biodiversity (SFB) Project.



Image: Green-billed Malkoha

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ACKNOWLEDGEMENTS

We gratefully acknowledge the support of the Department of Terrestrial Protected Areas Conservation (DTPAC), General Department of Administration for Nature Conservation and Protection (GDANCP), Ministry of Environment (MoE) and USAID in making this compilation of significant species in Cambodia possible.

The data from the field was made possible with thanks to the following NGOs and organizations working throughout Cambodia; Forestry Administration (FA); The Wildlife Conservation Society (WCS); Wildlife Alliance (WA); Panthera and Wildlife Conservation Research Unit, Oxford University (UK); Angkor Centre for Conservation and Biodiversity (ACCB); Conservation International (CI) and Fauna & Flora International (FFI).

Pictures that were not taken in PPWS are marked and their origin is stated.

We also thank K. Fletcher & Donna Baylis for some of the beautiful wildlife images taken in PPWS for this book.



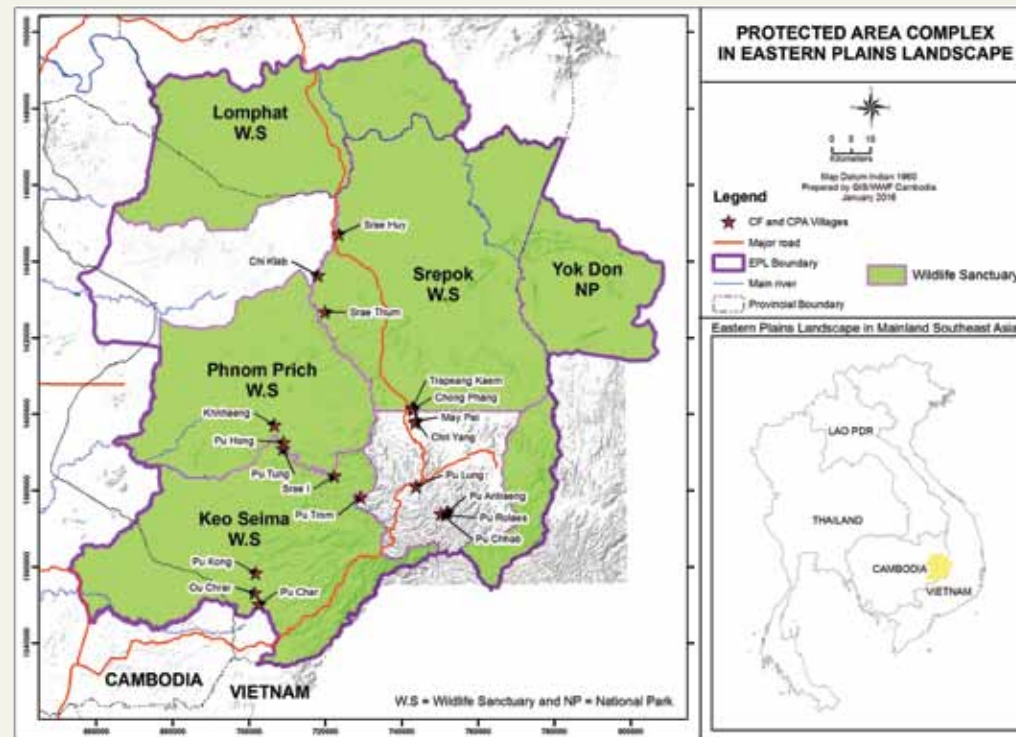
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INTRODUCTION

The Phnom Prich Wildlife Sanctuary (PPWS) covers an area of more than 2,000km², located within the heart of the Eastern Plains Landscape (EPL). The Eastern Plains Landscape, which straddles two countries, is a vast network of contiguous protected areas and is considered an important area for supporting a large number of globally threatened species (Gray et al 2012).

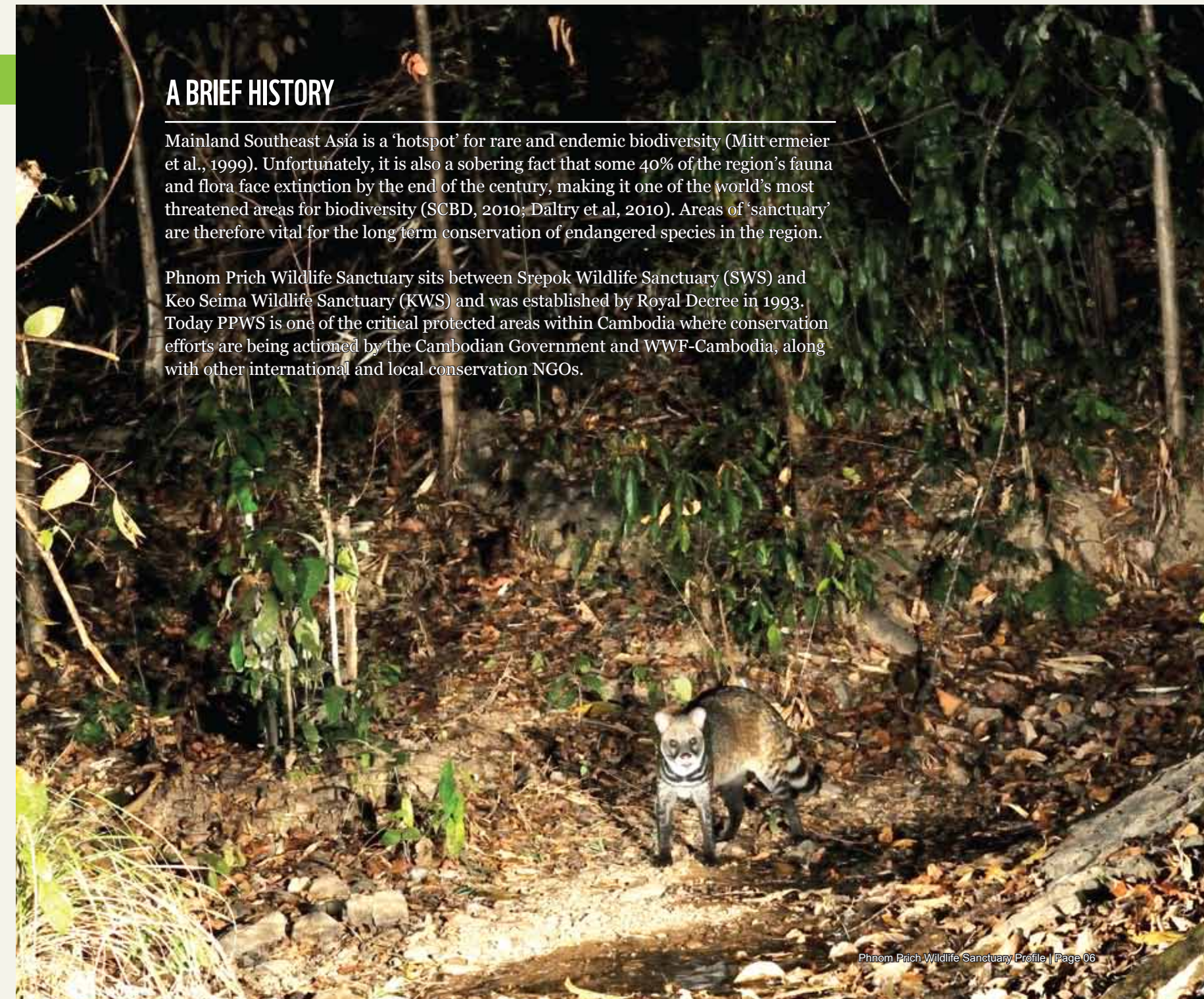
PPWS hosts an impressive array of wildlife species and rich habitat diversity, including 18 endangered and critically endangered species (mammals, birds and reptiles). Whilst PPWS is an important habitat for wildlife, it is also of great social, economic and cultural importance to the local communities who live there; with people harnessing the natural resources in the forest and providing much needed income for their households. Yet, pressures of the modern world (from habitat loss, to hunting, and conflict with humans) are having an extremely negative impact on the wildlife found in the region, and WWF-Cambodia is working with the GDANCP, Ministry of Environment to protect and conserve this landscape.



A BRIEF HISTORY

Mainland Southeast Asia is a 'hotspot' for rare and endemic biodiversity (Mittermeier et al., 1999). Unfortunately, it is also a sobering fact that some 40% of the region's fauna and flora face extinction by the end of the century, making it one of the world's most threatened areas for biodiversity (SCBD, 2010; Daltry et al, 2010). Areas of 'sanctuary' are therefore vital for the long term conservation of endangered species in the region.

Phnom Prich Wildlife Sanctuary sits between Srepok Wildlife Sanctuary (SWS) and Keo Selma Wildlife Sanctuary (KWS) and was established by Royal Decree in 1993. Today PPWS is one of the critical protected areas within Cambodia where conservation efforts are being actioned by the Cambodian Government and WWF-Cambodia, along with other international and local conservation NGOs.



PPWS -THE FOREST

The Phnom Prich Wildlife Sanctuary includes a range of different forest types, which allows for a diverse number of wildlife species to live within the area. The area is characterized by mixed elevations supporting Deciduous Dipterocarp Forest (DDF), semi evergreen forest (Pin et al 2013) and bamboo forest patches, which are scattered with rivers, water holes and mineral licks – providing vital food, shelter and water to the elephants that roam through. Dipterocarpaceae are a large family of tropical hardwood trees that are long-lived and can grow to exceptional sizes. Semi evergreen forest communities have a characteristic tall and multilayered forest structure similar to that of lowland evergreen rain forest, but grow in areas of lower and more seasonal rainfall regimes. Many wildlife species, such as elephants, wild cats, wild cattle and deer seek refuge in the shade and higher humidity found in patches of semi-evergreen forests during the dry season. These patches of semi-evergreen forest contain some of the most valuable timber species in the ecoregion and thus are threatened through increased demand for luxury timber.



BIODIVERSITY SURVEYS

The General Department of Administration for Nature Conservation and Protection, (GDANCP) Ministry of Environment, in collaboration with WWF-Cambodia, carries out an array of biodiversity surveys throughout Cambodia. The aim of the surveys is to gain a greater understanding of the species of wildlife present and to gain baseline population estimates. They also allow for the trends of endangered populations to be monitored. The resulting data from these biodiversity surveys highlights the importance of PPWS (as part of the Eastern Plains Landscape) as a high priority area for the conservation of globally threatened species.

The biodiversity research surveys involve camera trapping, wildlife monitoring programmes through distance-based line transects, listening posts and fecal DNA sampling. These surveys help gather data on a variety of species from large mammals such as the Asian elephant, leopard, banteng and gibbon, to many of the critically endangered and endangered birds such as the Giant ibis (the national bird of Cambodia), white-shoulder-ibis, three species of vulture and the charismatic green peafowl. Some of the images used in this book have been collected from the GDANCP / USAID / WWF-Cambodia camera traps placed up in PPWS, the rest of the images have been taken by photographers and videographer K. Fletcher and Donna Baylis (where images were not available from PPWS, they have been taken from adjacent sanctuary SWS).

Results from these surveys are crucial for assisting the Royal Government of Cambodia in making essential conservation management decisions as well as evaluating conservation priority areas and monitoring the success of current conservation efforts.



FLAGSHIP SPECIES¹

A flagship species is a selected threatened species that can act as a symbol, which can help drive conservation efforts to help protect a larger habitat. By focusing on, and achieving conservation of flagship species, the status of many other species which share its habitat – or are vulnerable to the same threats – may also be conserved. In Cambodia, the Asian elephants and Tigers (to be reintroduced) are both considered flagship species for the region. Whilst the Asian elephants are currently roaming the landscape, tigers are functionally extinct in Cambodia and it is the Royal Government of Cambodia's mission, along with support from WWF-Cambodia, to bring back tigers to this landscape.

Asian Elephant (*Elephas Maximus*)

The Asian elephant is one of Asia's most iconic and charismatic species and for thousands of years has been an integral part of both the landscape and culture. Unfortunately, pressures of the modern world (from habitat loss, to hunting, and conflict with humans) have had extremely negative impacts on the elephant population. Asia is the world's most densely populated continent and a huge percentage of the elephants' former range has already been lost. And as the human population continues to grow, the species' remaining habitat is shrinking fast². Cambodia is currently considered as a stronghold for Asian elephants within the region (Cambodia, Laos and Vietnam). The largest known populations in Cambodia exist within the (1) Eastern Plains Landscape (EPL) which comprises of 5 protected areas in eastern Cambodia, including PPWS, and (2) Greater Cardamom Landscape (Cardamoms) spanning 5 provinces in the South west of Cambodia, but can also be found in Chhaep Wildlife Sanctuary (CWS) and Prey Preah Rokha Wildlife Sanctuary in the north of the country. PPWS is a key habitat for the species and provides a vast forest in which the elephants can find water, food and shelter. Asian elephants need to eat an average of 150 kg per day³ to survive; they also need to drink up to 200 litres a day so they are always close to a source of fresh water (source: WWF International). Asian elephant population is currently estimated to be between 39,463-47,427 individuals worldwide, with only 250-600 individuals in Cambodia (IUCN). Using fecal-DNA based capture mark recapture sampling, WWF-Cambodia and MoE identified that the Phnom Prich Wildlife Sanctuary holds part of a regionally significant population of approximately 136 ±18 (Gray et al 2014).

Did you know? Elephants have the longest gestation period of all mammals, between 18 – 22 months, carrying their young for nearly 2 years before giving birth. Because of this long gestation period, elephants do not give birth to many young, thus conservation of this species is imperative if they are to remain in Cambodia.

¹ http://wwf.panda.org/about_our_earth/species/flagship_keystone_indicator_definition/

² http://wwf.panda.org/about_our_earth/species/flagship_keystone_indicator_definition/

³ <http://www.asianelephant.net/wildlife.htm>



Tiger Restoration (Panthera Tigris)

Historically Cambodia's dry forests in the Eastern Plains Landscape supported diverse and abundant wildlife, including tigers - however, intensive poaching of both tigers and their prey lead to a rapid decline in the big cats. The last tiger was seen on camera trap in the Mondulkiri Protected Forest (now called Srepok Wildlife Sanctuary) in 2007. Today there are no longer any breeding populations of tigers left in Cambodia, and they are therefore considered functionally extinct. As such the Cambodian Tiger Action Plan recommends tiger restoration in the EPL and Cardamon Mountains.

Tigers are one of the most iconic species on the planet, yet they are more than just a beautiful animal. Reintroducing tigers to Cambodia has the potential to benefit the whole country—with the people, forests and wildlife all gaining from strengthened law enforcement in the region. Tigers are a fantastic flagship species and symbolize conservation efforts for all of Cambodia's endangered species. As well as a symbolic conservation effort, tigers also represent a balanced ecosystem and a healthy forest. The tiger reintroduction therefore symbolizes hope and strengthened conservation for the whole region.

Did you know? The tiger is the only big cat with stripes, and these stripes – like a human fingerprint – are completely unique to each tiger. Individuals can therefore be identified depending on their unique markings.

THE WILD CATS

The Phnom Prich Wildlife Sanctuary is home to a variety of wild cat species. The region provides the cats with multiple prey species for their food, and shelter in the form of the vast forested areas. These wild cats however, face many threats and their numbers are declining. Conservation efforts must be stepped up if these beautiful animals are to continue roaming this habitat. Most of the wild cat species face threats from poaching for their fur coats and body parts, habitat loss and caught in snares that are used for trapping multiple wildlife species.

Leopard - (Panthera Pardus)

Cambodia was once a stronghold for leopard populations in the region (Cambodia, Vietnam, Laos), but there has been a dramatic decline in leopard numbers over the last 5 years, with few viable populations remaining in country (Panthera report 2015). PPWS still provides habitat for a few of the remaining leopards in Cambodia, thus it is a hugely important site to be protected. Listed as Near Threatened on the IUCN Red List, their populations are much more critical in Cambodia as they face poaching for their body parts and pelts. The leopard is one of the five "big cats" in the genus Panthera and has the largest range throughout the world of any of the big cats. They occur most frequently in Africa, and although they are found in Southeast Asia, including Cambodia, their population in these regions is threatened. Numbers are believed to be sparse throughout Cambodia, with sightings in Phnom Prich Wildlife Sanctuary (WWF), Srepok Wildlife Sanctuary (WWF), Keo Seima Wildlife Sanctuary (FA / WCS), Virachey National Park landscape (FFI), and CWS.

Did you know? The leopard can be individually identified by its pattern of spots, which contrast with the pale background coat colour and the white underparts.



Jungle Cat (*Felis Chaus*)

The population of the Jungle Cat in Cambodia is unknown, however individuals have been caught on camera trap in PPWS (WWF-Cambodia). The Jungle cat has an extremely large global range including India, Pakistan and Bangladesh, but also occurs in Africa, and across southwest Asia, Central Asia and Southeast Asia (IUCN Red List). Within these regions however, its distribution is somewhat sparse and patchy. Listed on the IUCN Red List as Least Concern, this species of wild cat is not threatened as much as some of the other cats found in Cambodia, but the numbers found in PPWS are still under pressure due to habitat loss (IUCN Red List). The Jungle Cat is a large member of the wild small cats, with a slender frame, long legs and long, close-set, rounded ears, which have characteristic small black tufts of hair on the tips. Little is known about the Jungle Cat, but contrary to its name, it is not typically a frequenter of “jungles”, found instead in a variety of habitat types available in PPWS as well as SWS. Male Jungle Cats use scent marking as a way of determining their territory, which overlaps the range of several females.

Did you know? The Jungle Cat is generally a solitary animal, only socializing with other individuals during the breeding season. As such they need large areas in which to roam and PPWS provides the perfect landscape to allow this (ARKive).

Leopard Cat (*Prionailurus Bengalensis*)

The Leopard cat is a small, wild cat native to South and East Asia and is listed Least Concern (IUCN Red List). With a wide distribution and tolerance to human modified landscapes the Leopard Cat's population is globally abundant, however within Cambodia, their numbers are threatened by habitat loss and poachers (IUCN Red List) and the population living in PPWS is of great regional importance. Leopard cats are very good at adapting to a wide range of different habitats and as such live in a wide variety of different habitat-types across their global range, including tropical rainforest, temperate broadleaf and coniferous forest, as well as grasslands. Leopard cats are found in nearly all of the protected areas within Cambodia, including the Eastern Plains Landscape (FA/WCS, WWF), where PPWS is located, Greater Cardamom Landscape (CI, FFI, WA), Stung Treng Province (ACCB), CWS, Kulen Promtep Wildlife Sanctuary and Prey Preah Rokha Wildlife Sanctuary. The forests found in the Phnom Prich Wildlife Sanctuary provide a mix of dense and patchy forested areas and plenty of potential prey; the Leopard Cat has a fairly diverse diet and is able to find food in most habitats. However, it is not invulnerable to habitat loss and degradation and this, coupled with poaching, is causing population declines in some regions.

Did you know? Leopard Cats are the size of large housecats.

Image: Leopard Cat

Clouded Leopard – (Neofelis Nebulosi)

The Clouded Leopard is the smallest of the big cat species found in Cambodia and worldwide. Fully grown adults can reach a body size of 3ft long, with an impressively long tail of up to 3ft as well (ARKive). This beautiful Asian cat, named for its spotted coat, is seldom seen in the wild, and its habits remain a bit mysterious. The Clouded leopard is listed as Vulnerable on the IUCN Red List and numbers are believed to be in decline due to habitat loss and poaching – although exact figures are not known due to the secretive nature of this species. Clouded leopards have a vast global range and roam the hunting grounds of Asia from the rain forests of Indonesia to the foothills of the Nepali Himalayas (IUCN Red List). Within Cambodia, PPWS is one of the areas that the Clouded leopards are found (WWF/WildCru), but not in great numbers. These cats are also known to prowl the Keo Seima Wildlife Sanctuary (FA/WCS) in the EPL and the Greater Cardamom Landscape (CI, FFI, WA). This species is more at home in the trees than on the ground and can move nimbly through the dense forests found in PPWS.

Did you know? Though Clouded leopards are great climbers, scientists believe that they do most of their hunting on the ground, feasting on deer, pigs, monkeys, and smaller fare such as squirrels or birds. They are aided in their hunting by the largest canine teeth (ARKive).

Marbled Cat (Pardofelis Marmorata)

The Marbled cat has a wide global range, and as well as being native to Cambodia, is also found across South East Asia and up into Bangladesh, China, India and Nepal (IUCN Red List). Listed as Near Threatened on the IUCN Red List, globally the Marbled cat is not under as many pressures as some of the other wild cat species, however, they are still decreasing due in part to severely fragmented populations (IUCN). It is believed the Marbled cat is forest dependent (Nowell and Jackson 1996), and as such, PPWS (Panthera/WWF) provides a key habitat for the Cambodian population, however, over the years, camera traps have only captured a few images of this beautiful cat, suggesting it is only present in extremely low numbers. Marbled cats have also been recorded in KWS (FA/WCS), Cardamom Mountain Landscape (FFI), Southern Cardamom Mountains (WA), Virachey National Park Landscape (FFI), CWS, Kulen Promtep WS, and Prey Preah Rokha WS. This wild cat possesses an unusual mixture of small and big cat characteristics (ARKive). At just three kilograms in weight, it is roughly the same size as a domestic cat, but its exterior characteristics resemble the much larger Clouded leopard in its broad feet, enlarged canines and strikingly similar, blotched coat pattern.

Did you know? The Marbled Cat has a distinctive bushy tail, which is extremely long and used primarily for the arboreal lifestyle that this species adopts.

UNGULATES

The Phnom Prich Wildlife Sanctuary is an important region for providing vast areas of resources that ungulate species living in Cambodia need. Wild cattle and deer species grace this landscape, finding plentiful grass to feed on and forest cover to hide from predators. The ungulates form a key part of the prey species, and so, healthy numbers of ungulates, means healthy numbers of wild cats and canids.

Banteng (Bos Javanicus)

Listed as Endangered on the IUCN Red List, the Cambodian population of Banteng is of global significance. The EPL in Cambodia, of which PPWS is a part, is home to the world's largest population of this wild cattle species (WWF/GDANCP). Banteng are continuously threatened by poaching throughout their range and are often killed for their 'trophy horns' and meat. In Cambodia, Banteng are considered by some to be the most beautiful and graceful of all the wild cattle species, and most likely to be the ancestor of Southeast Asia's domestic cattle. They are found in open areas close to dense thickets and forests in Southeast Asia and their diet consists of grasses and other vegetation. As well as PPWS, Banteng are also found in SWS (WWF), KWS (FA/WCS), Stung Treng Province (ACCB), Central Cardamom National Park (CI), Cardamom Mountain Landscape (FFI), Prey Lang WS (CI), CWS, Kulen Promtep WS, and Prey Preah Rokha WS.

Did you know? The handsome Banteng largely resembles domestic cattle both in size and colour, but also demonstrates considerable sexual dimorphism, allowing the sexes to be readily distinguished (ARKive).



Gaur (Bos Gaurus)

The Gaur is the largest of the wild cattle species living in Cambodia, and one of the largest worldwide. Over the last three generations, the Gaur have seen population declines by as much as 70% in parts of their global range (IUCN Red List) as they suffered from poaching and habitat loss. This decline is also notable throughout Cambodia, where only small fragmented population exists throughout the country. These can be found in the forested landscapes of PPWS, SWS and KWS. They are also still found in pockets in Greater Cardamom Landscape (CI, FFI, WA), Stung Treng Province (ACCB), Prey Lang WS (CI), CWS, Kulen Promtep WS, and Prey Preah Rokha WS. Listed as Vulnerable on the IUCN Red List, and with low numbers existing in Cambodia, it is crucial that conservation efforts continue in order to conserve this magnificent species. Gaur historically occurred throughout South and Southeast Asia in Bangladesh, Bhutan, China, India, Laos, Malaysia, Myanmar, Nepal, Thailand and Vietnam – no longer occurring at all in Sri Lanka (IUCN Red List) . Today the population is believed to be between 13,000 – 30,000 animals worldwide (IUCN Red List).

Did you know? During the mating season the loud bellowing call of the male Gaurs may be heard from over 1.6 kilometers away.



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Sambar Deer (*Rusa Unicorn*)

The Sambar deer is listed as Vulnerable on the IUCN Red List and in the last three generations, declines in population across mainland Southeast Asia (Vietnam, Laos, Thailand, Cambodia, Myanmar, Malaysia), Bangladesh and possibly Borneo and Sumatra have exceeded 50% (IUCN Red List). Globally, these deer are threatened by a demand for bush meat, which is the biggest threat faced by all of the ungulates in Cambodia. They are also killed within their Cambodian range for food, as well as for their antlers. Endangered in Cambodia due to habitat loss and poaching, it is estimated that there are only a few Sambar Deer remaining in PPWS (WWF), so it is vital these individuals are protected. Within Cambodia, Sambar Deer are also found in SWS, KWS (FA/WCS), Greater Cardamom Landscape (CI, FFI, WA), Stung Treng Province (ACCB), Virachey National Park Landscape (FFI), Prey Lang WS (CI), CWS, Kulen Promtep WS, and Prey Preah Rokha WS. Male Sambar Deer are among the largest of Southeast Asia's deer, with adults reaching up to 2 metres in length. As in many other deer, only the male Sambar Deer has antlers. The Sambar Deer is one of the few deer that attacks sizeable predators, and it prefers to hold confrontations in shallow water.

Did you know? To mark his territory in the breeding season, the male will spray his body with urine, then stand up-right on his hind legs and rub his odour on the trees.



Eld's Deer (*Rucervus Eldii*)

The Eld's Deer is indigenous to South and Southeast Asia, with three, geographically isolated subspecies recognised today. The Thailand brow-antlered deer (*R. e. siamensis*) is found in Cambodia, Hainan Island (China) and Lao PDR. The Manipur brow-antlered deer (*R. e. eldii*) is confined to a small population in Manipur, India; and the Burmese brow-antlered deer (*R. e. thamin*) occurs in central Myanmar. Listed as Endangered on the IUCN Red List, the Eld's deer faces threats from poaching for their 'trophy horns' and for bush meat, and traditional medicine. The numbers of Eld's deer are declining worldwide and within Cambodia they are confined to just the PPWS (WWF), the SWS, and KWS (FA/WCS) in the northeast, and in the central lowland area of Western Siem Pang WS, as well as CWS, Kulen Promtep WS, and Prey Preah Rokha WS in the north. Ang Trapeang Thmor Sarus Crane Reserve is one of the handful sites of Cambodia where the Eld's Deer can be seen⁴.

Did you know? This deer species undergo short migrations in order to find water during the dry season and food during the growing season; with a diet that includes a variety of grasses and fruit – the continuous habitat of PPWS and corridors for movement are therefore vital for the survival of this species.



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⁴<http://www.samveasna.org/bird-site/ang-trapaeng-thmor.html>



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Red Muntjac (*Muntiacus Muntjak*)

The Red Muntjac deer is the most widespread of the 'barking deer' species and is listed as Least Concern on the IUCN Red List. It remains common throughout most of its range, in part due to its resilience to hunting and deforestation (IUCN). Twelve species of 'barking deer' are currently recognized, of which 11 occur in Southeast Asia, particularly in the north of the region. They are called 'barking deer' due to the alarm call they make when a predator or other threat is nearby - the call sounds like the piercing bark of a small dog. They are found in all 39 of the protected sites in Cambodia (ACCB, CI, FA/WCS, FFI, Panthera, WA, WWF). The population found in PPWS is of particular importance as the Red Muntjac is a vital prey species for the tiger restoration.

Did you know? The Red Muntjac has a unique way of communicating with other members of their species – they have a pre-orbital gland below each eye; secretions from this gland are used for chemical communication, and males use the secretions to mark their territory.



© FA/WWF Cambodia / Seppok Wildlife Sanctuary



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CANIDS

As well as a wide range of felid species in PPWS, the landscape is also home to two prominent canid species; Dhole (*Cuon alpinus*) and Asiatic jackal (*Canis aureus*). Both of these canid species are carnivores and prey on the ungulates, small mammals, wild birds and invertebrates found within the PPWS habitats.



Dhole (*Cuon Alpinus*)

Dholes are listed as Endangered on the IUCN Red List and, with rapidly declining numbers in Cambodia, are considered rare within all landscapes in the country. Historically, dholes occurred throughout South and East Asia, to as far north as the southern parts of Russia and as far west as the mountains ranging from Kazakhstan to northern Pakistan (IUCN). However, they have disappeared from more than 75% of their historic range and most remaining populations are fragmented. In Cambodia, the populations of dholes found in PPWS are important for the remaining regional presence. Dholes are estimated to still be present in the Eastern Plains landscape, northeast Cambodia (IUCN, CI, FA/WCS, FFI, Panthera), the Cardamom Mountains, and the Northern Plains Landscape. Dholes or Asian wild dogs are pack-living canids, with pack sizes ranging from around 5 to 12 members. Their diet is almost wholly carnivorous, predominantly made up of medium-sized ungulates such as Sambar deer and banteng, as well as wild pig and muntjac. Hunting in thick forest, dholes rely on scent to locate prey, occasionally jumping high into the air to get their bearings.

Did you know? Cooperating in a pack to hunt prey, dholes are capable of killing animals over ten times their own body weight in size (ARKive).





Asiatic Jackal (*Canis Aureus*)

The Asiatic Jackal, also known as the Golden Jackal is a widespread species and is listed as Least Concern on the IUCN Red List. It is fairly common throughout its range with high densities observed in areas with abundant food and cover. Due to their tolerance of dry habitats and their omnivorous diet, the Asiatic jackal can live in a wide range of habitats (IUCN). Globally this species is believed to be increasing (IUCN). In Cambodia the exact numbers are unknown, but they still exist within the PPWS (Panthera). As well as PPWS, they are also found in SWS (WWF/Panthera), KWS (FA/WCS), Stung Treng Province (ACCB), CWS, Kulen Promtep WS, and Prey Preah Rokha WS. Although the Asiatic jackal may scavenge on carrion and garbage, it is also a skilled hunter of birds and mammals, up to the size of Giant Ibis and Red Muntjac, and also takes reptiles, fish, insects and fruit.

Did you know? Humans benefit from the activities of the Asiatic Jackal, as they scavenge waste carcasses, which reduce the spread of disease. They also control pests such as rodents and rabbits.

PRIMATES

The primates are a group of monkey, ape and loris species that are predominately arboreal in nature. The vast canopy of Phnom Prich Wildlife Sanctuary is home to many of these primates.

Image: Pig-tailed Macaque

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Yellow-cheeked Crested Gibbon (*Nomascus Gabriellae*)

The Yellow-cheeked crested gibbon is a species of gibbon native to Cambodia, Vietnam and Laos (IUCN). This diurnal and arboreal gibbon lives in primary tropical forest, foraging for fruits, using its distinctive long arms to swing through the trees. The yellow-cheeked crested gibbon is one of six species of crested gibbons, all of which have suffered from accelerating declines throughout their range. They are listed as endangered on the IUCN Red List and face threats from poaching for the pet trade and habitat loss. Yellow-cheeked crested gibbons occur east of the Mekong river in northeastern Cambodia, southern Vietnam, and southern Laos, with Cambodia containing the largest population of Yellow cheeked crested gibbons in the world. In the Eastern Plains Landscape of Mondulkiri, a recent survey found PPWS to hold the second largest number of these gibbons in Cambodia after Keo Seima Wildlife Sanctuary (FA / WCS). These primates are also found in Siem Pang WS (CI).

Did you know? As the young Yellow Cheeked crested gibbons grow up, their fur changes colour from bright orange, to the black / grey pelage that you see on the adults.



© Matt Hunt / Free the Bears / WWF-Cambodia

Black-shanked Douc (Pygathrix Nigripes)

The Black-Shanked Douc is listed as Endangered on the IUCN Red List. The species is found in north-eastern Cambodia and southern Vietnam (IUCN), and with such a small global range, the population found in PPWS is of vital importance. These primates are also found living in SWS, KWS (FA/WCS), and Stung Treng Province (ACCB). They are poached for the pet trade and have suffered considerable habitat loss over the last three generations. Active during the day, the Black-Shanked Douc spends much of its time feeding high in the forest canopy. A continuous forest habitat is vital for this species and they move around in groups of between 3 and 50 individuals. The Black-Shanked Douc is a very social primate, and individuals will readily play and groom together. Motherhood is a shared duty, giving females time to feed, as well as helping to integrate the young into the group. IUCN endangered.

Did you know? The Black-Shanked Douc's water requirement is provided mostly by its food, but it will also lick the dew from leaves in the morning.





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Germain Silvered Langur (*Trachypithecus Germaini*)

Germain's Silvered Langur occurs in southeast Thailand, Cambodia (southern Vietnam, Myanmar, and southern Lao People's Democratic Republic, and is a long-tailed, tree-dwelling monkey. Listed as Endangered on the IUCN Red List, the population in Cambodia, is therefore significant within the region and must be protected. This species has been found in SWS, KWS (FA/WCS), Southern Cardamom Mountains (WA), Stung Treng Province (ACCB), Siem Pang WS (CI), CWS, Kulen Promtep WS, and Prey Preah Rokha WS. The Germain Silvered Langur faces threat from poaching for the pet trade and use in traditional medicine (IUCN). Little information is available on the biology of Germain's langur. However, like other members of the genus, it is likely to spend most of its time in the trees, feeding on a diet of leaves, fruit and flowers.

Did you know? A large, specialized stomach containing symbiotic bacteria enables this group of monkeys to digest leaf material more efficiently than any other primates, and also to detoxify otherwise poisonous leaves.



© Fletcher & Baylis



Image: Pig-tailed Macaque

© Fletcher & Baylis

MACAQUES

Stump-tailed Macaque (Macaca arctoides); Pig-tailed Macaque (Macaca nemestrina); Long-tailed Macaque (Macaca fascicularis)

PPWS is home to several species of macaque, which thrive in the forests found there. Both the Stump-tailed and Pig-tailed macaques are listed as Vulnerable on the ICUN red list, whilst the Long-tailed Macaque is Least Concern. The latter species is extremely tolerant to a range of habitats, but they face a major threat of hunting throughout most of their range, as well as habitat loss (IUCN). They all have globally decreasing populations (IUCN), with habitat loss, poaching and pet trade being the major threats. Native to Southeast Asia, as well as up into India and China, these macaques have a wide global range, but the populations in Cambodia (as well as Laos, Vietnam and Thailand) are considered to be a stronghold (IUCN). PPWS provides a vast forested area for these primates (WWF), and within Cambodia they are also found in SWS, KWS (FA/WCS), Cardamom Mountain Landscape (FFI), Virachey National Park Landscape (FFI), and in the Northern Plains (WCS). They have a diet largely comprised of fruit, seeds, young leaves and other vegetation, but it is also known to eat insects, bird eggs and frogs. It spends the daytime foraging for food and stores the food it collects in cheek pouches, which are a common feature of the *Macaca* genus. Although the Stump-tailed Macaque can climb trees it is typically terrestrial and far more agile on the ground.

Did you know? As in humans, the Stump-tailed macaque is known to lose body hair as it ages and can even end up bald. Its tail is so small that it can often appear absent. Also, the Long-tailed macaques are primarily arboreal and can leap distances between trees up to five meters using their long tails for balance.

BIRDS

The Phnom Prich Wildlife Sanctuary is home to a multitude of bird species in Cambodia, and is home to globally significant populations of both the Giant Ibis and the White shouldered Ibis, as well as all three species of vultures found in the region.

Giant Ibis (*Thaumatibis Gigantea*)

The Giant Ibis is the national bird of Cambodia and is an iconic symbol of the wild birds present in the country. This wild bird is listed as Critically Endangered on the IUCN Red List and as such the populations found in Cambodia are globally significant. They face threats deforestation and habitat conversion in the region. The Giant Ibis, as its name suggests, is giant in size and once fully grown, they can grow up to 102 – 106 cm in length. With a remaining population of fewer than 250 birds, the Giant Ibis is found only in northern Cambodia and the extreme southern tip of Laos. It was previously found in southern Vietnam and southeast and peninsular Thailand, but is now extinct in these countries (IUCN). Data is limited, however, it nests in trees, and is known to wander widely in response to seasonal water-levels and human disturbance. Individuals, pairs or small groups of birds feed together, probing into soft mud, or foraging on dry land during the dry season (IUCN). There are globally significant populations of this species found in Cambodia's Mondulkiri province and Preah Vihear (IUCN). PPWS is an important habitat for the species as their numbers have been rapidly declining in different parts of Southeast Asia.

Did you know? The Giant Ibis's diet consists mainly of invertebrates, particularly locusts and cicadas, as well as crustaceans, small amphibians, small reptiles, and seeds (source: ARKive)

²<http://www.iucnredlist.org/details/22697536/0>



White-shouldered Ibis (*Pseudibis Davisoni*)

The numbers of White-Shouldered Ibis present in PPWS and the northern regions of Cambodia are important for the species, with the current population of White-Shouldered Ibis in Cambodia being a global stronghold for these birds. Their numbers have been declining rapidly in different parts of Southeast Asia. As its common name suggests, this large, predominately black coloured ibis, has a contrasting white patch on the inner forewing, or 'shoulder', although this is often concealed on standing birds. Having declined significantly from much of its former range during the course of the 20th Century, the White-Shouldered Ibis is now confined to just a few sites in southern Vietnam, extreme southern Laos, northern Cambodia and East Kalimantan in Indonesian Borneo. It is listed as Critically Endangered on the IUCN Red List, and is threatened by poaching and habitat loss. The White Shouldered Ibis is now extinct in Thailand and fewer than 250 mature individuals are thought to remain in their range.⁶

Did you know? While some ibis species breed in large colonies, the White-Shouldered Ibis is believed to be a solitary nester. Nests are built in trees at a height of five to ten metres above ground, and two to four eggs per clutch is thought to be normal – nesting sites are therefore very important to conserve within Cambodia.

Image: White-Shouldered Ibis



⁶<http://www.birdlife.org/datazone/speciesfactsheet.php?id=3799>

White-winged Duck (*Asarcornis Scutulata*)

Listed As Endangered On The Iucn Red List, This Wild Bird Is Globally Declining In Numbers. They Are Native To Bangladesh, Cambodia, India, Indonesia, Laos, Myanmar, Thailand And Vietnam With An Estimated Population Of Only 1000 Individuals Left In The Wild (Iucn). Its Population Decline Is Largely Due To Habitat Loss Across Its Range And So Protected Areas Such As That Of Ppws And The Northern Regions Of Cambodia, Are Important For The Species. As The Name Suggests, This Large, Dark, Forest Duck Has White Wings When Open, With Only Small Patches Of White Visible When The Wings Are Closed. Found Singly Or In Pairs, The White-winged Duck Is Active Mainly At Dusk And Dawn, Feeding On Seeds, Vegetation, Fish And Other Animal Matter, As Well As On Aquatic Snails, Spiders And Insects.

Did You Know? The White-winged Duck Undergoes An Annual Molt In September Or October And Is Flightless For A Fortnight, Moving Into More Densely Forested Areas For Protection From Predators.

Green Peafowl (*Pavo Muticus*)

The Green Peafowl is best known for the distinctive tail feathers carried by the male birds. The beautiful iridescent tail that defines the male green peafowl's appearance is made up of more than 200 feathers. Each of these feathers ends in a beautiful brown, green and gold eyespot. It is listed as Endangered on the IUCN Red List and is threatened by poaching for feathers and meat, as well as habitat loss. This bird has undergone a serious decline in the last couple of decades and the only sizeable populations remaining are in the dry forests of Cambodia, Myanmar, Vietnam, and some pockets in Laos, China, Indonesia, India and Bangladesh (IUCN).

Did you know? Green Peafowl wander widely, but are not migratory, and are omnivores, foraging for grains, seeds, insects, shoots, buds, young leaves, and fruit. Females and juveniles travel in groups of two to six individuals, and do not form pair bonds or harems with males. However, when peahens (female peafowl) pass through the territory of a mature male during the breeding season, he will court them, dancing and displaying his impressive train in an upright fan-shape.



VULTURES

Red Headed Vulture (Sarcogyps calvus); Slender-billed Vulture (Gyps tenuirostris); White-rumped Vulture (Gyps bengalensis)

Globally significant populations of three species of critically endangered vultures still persist in northern and north-eastern Cambodia. These birds play a crucial role in the ecology of PPWS as scavengers and assist in stopping the spread of disease. All are listed as critically endangered on the IUCN red list and have suffered severe decline throughout the Indian sub-continent from non-steroidal anti-inflammatory drugs NSAIDs, such as diclofenac which was used for veterinary purposes, which is toxic to vultures. However, the biggest threat at present in Cambodia appears to be secondary poisoning. Other than PPWS, these vulture species are seen at six vulture restaurants around the country and the north of the country has the biggest population.

Did you know? India has lost almost 90% of its population of vultures making Cambodia the stronghold for these birds in Asia and the world. They face ongoing threats from poisoning in the region and conservation efforts are needed to protect them. Through a joint effort of WWF-Cambodia, Birdlife International, the Wildlife Conservation Society (WCS) and ACCB vulture monitoring has been conducted throughout their range in Cambodia at supplementary feeding stations (vulture restaurants). These occur on a monthly basis and simultaneous counts are conducted every quarter with the national census conducted on two occasions in June.



© FA / WWF-Cambodia / Srepok Wildlife Sanctuary



© FA / WWF-Cambodia / Srepok Wildlife Sanctuary

Image: Red Headed Vulture



© FA / WWF-Cambodia / Srepok Wildlife Sanctuary

¹ Non-Steroidal Anti-Inflammatory Drug. Three Gyps vulture species are on the brink of extinction in South Asia owing to the veterinary non-steroidal anti-inflammatory drug (NSAID) diclofenac.

REPTILES

The unique habitats found in PPWS are home to some of the most magnificent species of reptiles in the world, but unfortunately many of these species are also globally threatened.

Image: Siamese Crocodile

Siamese Crocodile (*Crocodylus Siamensis*)

The Siamese crocodile was previously found throughout South East Asia but is now extinct, or nearly extinct, from most countries except Cambodia. Listed as Critically Endangered on the IUCN Red List, this reptile faces major threats from poaching and habitat loss as well as climate change. The Siamese Crocodile is a small, freshwater crocodilian (a group that also includes alligators, caimans and the gharial) with a big threat to the species being farming and extensive breeding in captivity. The wild population found in Cambodia is mostly in the Greater Cardamom Landscape (CI, FFI, WA), but populations are also found in PPWS (WWF), SWS, Virachey National Park Landscape (FFI), and Siem Pang WS (CI). These areas are therefore significant both in Cambodia and globally for the wild populations of Siamese Crocodiles. Adult males can grow up to 3 metres in length. The adults feed mainly on fish but may also eat amphibians, reptiles and small mammals.

Did you know? The Siamese Crocodile is one of the most endangered crocodiles in the wild

Elongated Tortoise (*Indotestudo Elongate*)

The Elongated Tortoise gets its common name from its distinctively long, somewhat narrow shell, called the carapace. Listed as Endangered on the IUCN Red List and facing threats from poaching is found in tropical southern and Southeast Asia, and is found in parts of northeast India, Bangladesh, Cambodia, Laos, Myanmar, Nepal, Vietnam, Thailand and peninsular Malaysia. Recent surveys in Cambodia suggest the Elongated Tortoise to be found in PPWS (WWF), SWS (Panthera), KWS (FA/WCS), Stung Treng Province (ACCB), Cardamom Mountain Landscape (FFI), CWS, Kulen Promtep WS, and Prey Preah Rokha WS, although numbers are not known. It is an omnivore, regularly feeding on slugs and worms in addition to green leafy material and fruit.

Did you know? The male elongated tortoise tends to be narrower than the female, with a shorter tail and a more concave plastron (indented underside of shell). The hind claws of the female are also markedly longer and more curved than those of the male, and are believed to be an adaptation to nest building by the female.



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Bengal Monitor Lizard (*Varanus Bengalensis*)

The Bengal Monitor Lizard is wide ranging and is found from southeastern Iran, through south central Asia and eastwards throughout southeast Asia, as far as Java and into Indonesia. However, in the last century the species have been wiped out from parts of their former range (IUCN). This reptile is predominately threatened hunting for its skin and meat. Listed as Least Concern on the IUCN Red List, the species is found throughout Cambodia, with PPWS being one of the regions that they inhabit. They are fast on the ground and also good tree climbers! Young monitors may be more arboreal, but adults mainly hunt on the ground, with a diet consisting of mainly beetles and grubs, but also taking small rodents and snakes, ground birds, eggs and fish. Although large monitors have few predators apart from humans who hunt them for meat, younger individuals are hunted by many predators. The Bengal Monitor Lizard is mainly a solitary species. They are not territorial, and may change their range seasonally in response to food availability.

Did you know? Bengal Monitor Lizard use scent primarily as a method of communication and perception as they are known to flick their sensitive tongue to ‘taste’ their environment while moving their head side to side.



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CONNECTIVITY IN PPWS

The Phnom Prich Wildlife Sanctuary provides essential biological and social connectivity for the native wildlife and the indigenous people.

The eastern section of PPWS provides a crucial corridor to SWS which supports the annual movement of the magnificent Asian elephants as well as other leopards, dholes and other ungulate species. The area has remained free from human habituation and development to allow the elephants to follow their natural movement pattern that it they have walked for years. It is likely that the elephants move between the two protected areas in search of food and water sources in the different seasons.

The southern section of PPWS bordering KWS, has been noted as significantly important for supporting giant ibis, white-shoulder ibis, banteng, sambar and elds deer. Therefore, maintaining the connectivity and allowing movement of individuals between the protected areas is crucial for conservation.

CULTURE

With different beliefs and ethnic groups found within Mondulkiri Province and PPWS, the community illustrates a celebration of diverse society. The majority of households are Bunong – making up 70% of the total households in the region. The second most common ethnic group, is Khmer, which makes up 24% of the households in the village, and practices Buddhism. There are also a few Cham families (only 6%) who practice Islam. Bunong is the common language among the villagers. The Bunong are believed to have been living in the Mondulkiri area for around 2000 years, they traditionally have a strong link with their natural environment, collecting foodstuffs and other non-food products (such as timber or tree-sap) from the woods, as well as hunting in the woods around their villages. Traditionally the Bunong do not take products from the forests that they do not need themselves and therefore have a minimal impact on their environment. The Bunong's religious/spiritual beliefs are animistic, this is to say that they believe all things have spirits - animals, plants, hills, stones, jars, buildings - everything. Their ancestors are also represented by spirits. If these spirits are unhappy because of some human action they can intervene in the life of the Bunong, to harm or protect them. The Bunong area is a traditionally autonomous and self-governing society in which village elders are looked to solve internal disputes. If it is decided that a 'law' has been broken then it may be that the guilty party would have to pay a fine to the village and also need to carry out some ceremony. Crimes which are relatively common in the West and in much of 'developed society' as a whole such as thefts, physical violence, rape and murder are practically unheard of in Bunong society.





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LIVELIHOODS AND LOCAL COMMUNITIES IN PPWS

Agriculture and forestry are the most common sources of livelihood in the villages. Most of the villagers practice agriculture, with some of the most common cash crops planted being rice, soybean, peanut, sesame plants, and fruit crops like cashew. Corn and other vegetables are also planted and used mostly for household consumption. Cash earned from selling crops and other activities is used to buy rice for the family. Livestock is also common as cows, chickens and pigs are raised and used for daily consumption and traditional ceremonies. To supplement their income, local communities also go into the forest to collect non-timber forest products (NTFPs). The most common NTFPs being harvested in the Phnom Prich Wildlife Sanctuary are resin and honey which are sold to traders who visit their villages. Bamboo is also a key NTFP, which is naturally very abundant in the region and is just starting to be cultivated by the communities. WWF-Cambodia has been working closely with the local communities and helped to set up the Mondulkiri Forest Venture, which will allow the sale of NTFPs from the forest to benefit the local communities. Training has also been put in place to show how to harvest the natural resources sustainably without exhausting the stocks.



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THREATS AND PRESSURES IN PPWS

There are two main threats and pressures to the habitats and wildlife found in PPWS; these are:-

- Poaching
- Economic Land Concession (ELC)/Social Land Concession (SLC)

Poaching continues to be a threat in PPWS, as it is in all of the protected areas in Cambodia that are home to globally threatened species of trees and wildlife. In order to protect against poaching and logging strict law enforcement is required. The Ministry of Environment Law Enforcement teams in PPWS have been working closely with WWF to combat the ever increasing levels of poaching taking place in the region. However, the demands for bush meat and animal parts are continually increasing. It is crucial that law enforcement is strengthened and increased efforts are focused on working closely with local communities to educate on the importance of the wildlife species in the region, in order to control (and reduce) the threat poaching in the area.

With increasing human populations throughout Asia, Cambodian communities are spreading out and the need for food and agriculture is ever rising. As such, there is an increasing pressure on the protected areas in PPWS to be converted for land-use for agriculture or expanding communities through SLCs, or through the grant of an ELC to a company. It is crucial that the protected areas of forest are protected in Cambodia for future generations, and tool such as InVEST are used to understand the economic value found within the forests for improved land-use planning in the region. PPWS has considerable national and global biodiversity conservation importance and these threats and pressures must be identified and prevented in order to conserve the wildlife and natural resources that are found in this region. Protected areas need to remain intact, with vital biodiversity corridors and natural resources.



Image: Hair-crested Drongo

WWF-CAMBODIA'S WORK IN PPWS

WWF-CAMBODIA IS WORKING CLOSELY WITH MOE AND FUNDING PARTNERS TO TACKLE THE EXISTING THREATS AND PRESSURES SEEN IN PPWS AND BETTER PROTECT THE FOREST, THROUGH INCREASED LAW ENFORCEMENT AND THE DEVELOPMENT OF A PPWS MANAGEMENT PLAN.

WWF-Cambodia is helping to empower local communities through sustainable livelihoods projects, which allows them to utilize the natural resources within the forest without cutting down trees or exhausting the resources – for example with honey, resin and bamboo collection. WWF has provided the link between a private bamboo company and the local bamboo suppliers, to ensure improved and constant demand for the materials. WWF has also helped to set up the Mondulkiri Forest Venture (MFV) which is now running independently and allows the local people to make a sustainable living for themselves.

WWF-Cambodia is also working closely with schools and community leaders to provide education on the importance of conservation and prevention of habitat loss for generations to come, and the implications of climate change and crop failure if the forests are lost. WWF is carrying out teacher training, so that education can be consistently provided in school and a collaborative effort between the government and WWF has seen the development of eco-clubs, to bring environmental awareness to the next generation.

Furthermore, WWF-Cambodia along with RUPP and the Royal Government of Mondulkiri, have worked together to map and value the ecosystem services and natural resources present in Mondulkiri Province using the InVEST tool (Integrated Valuation of Ecosystem Services and Trade-offs). Such a valuation could lead the way for better spatial land planning in the country with regard to conservation.

ABBREVIATIONS

CAMPAS – Cambodia’s Protected Area System project

CR – Critically Endangered

DDF – Deciduous Dipterocarp Forest

ELC – Economic Land Concession

EN – Endangered

EPL – Eastern Plains Landscape

GDANCP – General Department of Administration for Nature Conservation and Protection

InVEST - Integrated Valuation of Ecosystem Services and Trade-offs

IUCN - International Union for Conservation of Nature

KWS – Keoseima Wildlife Sanctuary

LC – Least Concern

MFV – Mondulkiri Forest Venture

MoE – Ministry of Environment

NT – Near Threatened

NTFP – Non-Timber Forest Product

PA – Protected Area

PPWS – Phnom Prich Wildlife Sanctuary

RUPP – Royal University of Phnom Penh

SLC – Social Land Concession

SWS - Srepok Wildlife Sanctuary

TX2 – Double Tiger Initiative

VU – Vulnerable

WCS – Wildlife Conservation Society

WWF – World Wide Fund for Nature

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