

# Cambodian Journal of Natural History



## **ATBC Special Issue:**

Abstracts from the 2015 Annual Meeting of the  
Association of Tropical Biology & Conservation:  
Asia-Pacific Chapter

Are Cambodia's coral reefs healthy?

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Cover photo: An owl moth *Brahmaea hearseyi* (family Brahmaeidae) encountered in Phnom Samkos Wildlife Sanctuary, Cardamom Mountains, Southwest Cambodia (© Jenny Daltry, FFI). This large insect is widely distributed across the Asia-Pacific region, from the Himalayas and western China to Java and the Philippines. Its markings resemble the head of a reticulated python, and probably serve to ward off birds and other predators.

## Guest Editorial—The Association for Tropical Biology and Conservation (ATBC) Asia–Pacific Chapter meets in Cambodia

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In May 1999 I had the privilege of being one of the first scientists in many years to be given a short window of access to the remote lowland forests and pristine mid-elevation grasslands of northeastern Cambodia. My mission was to conduct a camera-trapping survey for tigers. Unfortunately that survey effort in Virachey National Park yielded no tigers. However, the “bycatch” records from our cameras did reveal the presence of other significant wildlife and, serendipitously, in the course of travelling to the survey location, our team was able to document the presence of an even more interesting mammal than the original target: a possibly new species of douc langur! That particular find was later described in this journal’s first issue (Rawson & Roos, 2008).

In the decade following our primate discovery, and as access to previously restricted areas increased, scientists and conservation organisations in Cambodia focused resources on biodiversity inventories and monitoring. I was lucky enough to be involved in the first formal wildlife surveys in Bokor National Park and in the protected forests of Mondulhiri and Preah Vihear that revealed new species records and range extensions for Cambodia. During this period, the numbers of amphibians, reptiles and fish known to occur in Cambodia each more than doubled, mammals increased by 62%, and birds by 40% (Daltry, 2011). The number of new species and new records for the country has continued to increase (Duckworth *et al.*, 2001; Daltry, 2013; Mahood *et al.*, 2013; Geissler *et al.*, 2015).

Knowledge of habitat affinities, species ecology and threats has burgeoned in the last 15 years as conservation resources and efforts have targeted sites and landscapes ranging from the flooded forests of the Tonle Sap to the Mekong grasslands, evergreen forests of the Cardamom Mountains, and the extensive deciduous dipterocarp forest of the Northern and Eastern Plains. The first long-term studies in

many years have been carried out for bats (Phauk *et al.*, 2013), primates (Starr *et al.*, 2011), birds (Keo, 2008; Goes, 2013), turtles (Platt *et al.*, 2008), large mammals (Gray & Phan, 2011; O’Kelly *et al.*, 2012) and aquatic fauna (Campbell *et al.*, 2006).

At the same time, capacity for biodiversity research and conservation has progressed in leaps and bounds in Cambodia. Now in its tenth year, the Centre for Biodiversity Conservation (CBC) at the Royal University of Phnom Penh has emerged as an important repository for specimens and a national centre of excellence and capacity building for taxonomic research and conservation. The CBC offers a MSc in Biodiversity Conservation course and produces a dozen Masters theses annually (Souter, 2013). Some graduates of this programme are now instructing their own degree courses and continue to be involved in local biodiversity research. Others have gone on to further study abroad.

Conservation NGOs have sponsored government officials to take higher degree courses in foreign universities, with some of these individuals having returned to take up leading roles on protected area and biodiversity conservation initiatives, in government agencies and NGOs.

National laws and policies have developed around the premises that wildlife, fisheries and forest resources are important to conserve and should be protected in their own right and for the benefit of local people living in and around them. Cambodia has established 23 protected areas, 10 protected forests and 58 fish sanctuaries, and has made measurable progress towards a quarter of the Aichi Biodiversity Targets (Government of Cambodia, 2014).

However, national budget allocations for conserving biodiversity and improving the livelihoods of local communities remain so low that few sites set aside for biodiversity conservation are effec-

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tively managed and large areas inside them are subject to forest clearance and unsustainable harvest of wildlife, timber and other forest resources. In the marine realm, coral reefs are being exploited and fish and other marine species have become increasingly vulnerable to over-harvesting and other anthropogenic threats (see Thorne *et al.*, 2015, in this issue). There is clearly a long way to go to achieve a balance between Cambodia's development goals and biodiversity conservation.

On the positive side, Cambodia is now a base for major international environmental initiatives hosted by the government (e.g. REDD+, climate change), most of the larger international conservation NGOs, and a plethora of local environmental NGOs and think-tanks, and this country has become a destination for regional and international biodiversity meetings.

It is with this background that I am delighted to announce the ninth meeting of the Association for Tropical Biology and Conservation (ATBC) Asia-Pacific Chapter. The ATBC is the world's largest group of scientists dedicated to the study and preservation of tropical diversity. The ATBC Asia-Pacific Chapter has chosen to meet in Phnom Penh from 30<sup>th</sup> March to 2<sup>nd</sup> April 2015 under the theme "*The Future of Biodiversity in Tropical Asia: Addressing Local and Global Challenges.*"

The ATBC meeting will bring together researchers, students, biodiversity specialists, conservation practitioners, policy makers, universities, government agencies and NGOs from around the Asia-Pacific region. It is hoped that the meeting will help to achieve a number of objectives:

1. To promote and improve cooperation, communication and interchange among all people interested in the study, conservation and/or management of any of the components and/or processes present in tropical ecosystems of the Asia-Pacific region.
2. To provide a space where the most recent findings related to tropical biology and/or conservation can be presented and discussed, to catalyse further advancement.
3. To encourage and facilitate research in all aspects of tropical biology and conservation.
4. To support the education of students at both undergraduate and graduate levels, as well as to assist them in the development of their careers.
5. To acknowledge and honour the work of researchers who have had an outstanding long-term impact on

the development of tropical biology and/or conservation.

6. To promote awareness in the general public of the importance of studying and conserving tropical ecosystems.
7. To link ATBC with conservation initiatives in Cambodia and the Asia-Pacific region.

This Special Issue of the *Cambodian Journal of Natural History* presents the abstracts from 223 original talks and posters that were selected for presentation at the meeting. They fall under four broad themes and 15 symposia relevant to the study, preservation and sustainable use of tropical biodiversity in Cambodia or the Asia-Pacific region:

## 1. Landscape scale conservation

1a) Developing innovative and cohesive approaches for the conservation of Southeast Asia's Critically Endangered species

The aim of this session is to catalyse effective conservation of Southeast Asia's Critically Endangered species, identified as a global priority for averting imminent species extinctions. We will introduce the IUCN SSC Asian Species Action Partnership and demonstrate how innovative approaches have benefitted the conservation of the region's Critically Endangered species.

1b) Assessing and enhancing the resilience of the Southeast Asian protected areas network

We aim to review some of the main threats to the effective maintenance of biodiversity within protected areas, including grazing, fires, encroachment and hunting. We will conduct a gap analysis and assess how well biodiversity is represented in protected areas throughout Southeast Asia, and suggest areas that should be protected to maintain connectivity in the future. We will also review management strategies and effective practices to combat the threats to protected areas throughout the region.

1c) Monitoring rare or elusive species in challenging environments

The aim of this session is to highlight examples of where the inherent challenges to implementing reliable monitoring programmes in the tropics have been overcome through a combination of adapta-

tion, innovation and persistence, and to identify gaps where further methodological advances are needed most.

#### 1d) Moving beyond integrated conservation and development: making incentives work for conservation

Participants will identify conditions that can be used to design conservation incentive schemes that will give community members opportunities to make informed choices about natural resource use, the means to use natural resources sustainably, and the motivation to choose to do so, leading to improved protection of habitats and wildlife.

#### 1e) Local and global challenges to conserving threatened tropical marine mammals in Asia

This symposium will discuss case studies aimed at protecting marine mammals living at the sharp edge of the human interface and on finding solutions to prevent the extinction of populations and species.

## 2. Species and environment

#### 2a) Fig trees and associated animals

Fig trees and their associated animals are model systems for co-evolutionary studies. This session will highlight the diversity of current research being carried out in the region, including taxonomy, pollination, gene flow and seed dispersal.

#### 2b) South and East Asian savannas: poorly understood and under threat

This symposium comprises a review of what is known about the biodiversity, ecology and conservation status of the remaining savannas in South and East Asia, and where research efforts should be focused in the future.

#### 2c) Understanding and conserving the diversity and ecology of Southeast Asian bats

We review the threats facing bats, the methods being implemented to combat these threats, and the implications that changes in bat diversity may have for the ecosystems that depend on them.

#### 2d) Latitude–altitude gradients: inferring the effects of climate change on biodiversity

Climate change is stated to be a global threat to biodiversity, yet without understanding the distribution of

species and their responses on more local scales, we cannot predict the potential effects of climatic change. Such an understanding is necessary to develop the most appropriate conservation plans.

## 3. Novel technologies in conservation

#### 3a) Knowing but not seeing: non-invasive DNA sampling for monitoring Asia's threatened biodiversity

Non-invasive genetic sampling is increasingly used to detect and monitor some of tropical Asia's most threatened species. This session explores the uses and potential applications of non-invasive genetic sampling for field conservation biologists in tropical Asia.

#### 3b) Ex situ plant conservation in tropical Asia

This session focuses on the collection, breeding and re-introduction of threatened plant species in tropical Asia. It reports on best practice and interdisciplinary tools to improve the capacity and efficiency of ex situ conservation in botanic gardens, seed banks, tissue culture collections, arboreta and nurseries.

#### 3c) Evolution and biodiversity in tropical Asia

This symposium explores the interface of evolutionary and biodiversity research, and highlights some of the advances in which evolutionary insights can deepen our understanding of natural communities of animals and plants, with a focus on Asia.

## 4. Supporting humans and biodiversity

#### 4a) Conservation education: building capacity for conservation in Southeast Asia

Southeast Asia is a global conservation priority area, yet for conservation to work in practice requires education and capacity building at all levels. Here we review case studies at various levels to develop best practice guidelines to help secure a future for biodiversity across Southeast Asia.

#### 4b) Continued conflict or co-existence: human impacts on primate behaviour and ecology

Using case studies from across Indochina, this symposium will investigate and discuss the true impacts of humans on primate behaviour and ecology. This is