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Saving species

Ecologist Dr Richard Corlett offers an insight into the biodiversity of Tropical East Asia.

By LIM CHIA YING
star2green@thestar.com.my

TROPICAL East Asia teems with some 15% to 25% of the world's terrestrial biodiversity and as such offers a fascinating insight into a rich ecosystem inherited from 5,000 years before.

Though a few dozen animal species have been lost in this region over time, an ecologist contends that the percentage of decline is not significant and should not make us lose sight over conserving what remains.

Prof Richard T. Corlett of the Xishuangbanna Tropical Botanical Garden at the Chinese Academy of Sciences in Yunnan, China, cautions that thousands more species are becoming so rare in the region that they will likely become extinct within the next few decades if no effective conservation actions are taken.

"The most species were present in mainland South-East Asia, from Peninsular Malaysia stretching up north to Indochina. Sumatra, Borneo and Java, on the other hand, had fewer species. Any area of Tropical East Asia now supports fewer species than it did 5,000 years ago, though in the bigger context, there isn't a major drop."A clear understanding is needed on the ecological patterns and processes in the region but there's no magic bullet to solving all conservation problems. They will have to be tackled one by one, site by site, species by species, person by person, and success will depend on our ability to build broad public support for biological conservation among all sectors of society," says Corlett in his talk *The Ecology Of Tropical East Asia: Past, Present And Future*, organised by Mindset, a research centre for tropical environmental studies and sustainability in University of Nottingham Malaysia Campus. At the talk, Corlett launched the second edition of his book, *The Ecology Of Tropical East Asia*. The first edition was published in 2009.

High diversity

Tropical East Asia is a term coined by Corlett for the region that is essentially South-East Asia but includes sub-tropical China up until Shanghai as well as North-eastern India. But it excludes Indonesian New Guinea and other islands in eastern Indonesia as these are very different geographically.

"This region shares a lot of species, genera and families of plants and animals that make for a coherent unit of study. For instance, all gibbons are found in this region and most of this region has or had gibbons," he explains.

He uses a baseline period of 5,000 years in his work as that was when humankind started to change natural landscapes. Agriculture, he found, developed 10,000 years back and started spreading south from Yangtze Valley in China about 8,000 years ago.

"While Tropical East Asia used to be covered almost entirely in forests, today it's just 40% with most of that logged. South China, Philippines and Thailand have lost the most. However, certain forest types have been lost even more, particularly the lowland rainforests and peat swamp forests. Much of the region's remaining forests today are in montane areas."

Timber logging by big commercial companies have been cited as the culprit behind forest destruction but Corlett says firewood collection and coal mining are also to blame. What is needed, he adds, is proper control over illegal logging.

He says in this region, Lambir Hills National Park in Sarawak stands out as the most species-rich rainforest, where 52ha of the forest floor supports some 1,175 tree species, compared with 1,166 species in the temperate forests of North America, Europe and northern Asia. He says protecting an important site such as Lambir Hills will require resources so as to ensure better patrolling by well-paid and highly-motivated staff.

"It's vital to improve protection for existing protected areas. There is no undisturbed lowland forest left in Peninsular Malaysia to establish new national parks but there are still large areas in Sabah and some in Sarawak where it may be possible to designate new national parks in logged forests, which are capable of recovering if protected from further disturbance," says Corlett, who has a PhD in plant ecology from the Australian National University and had previously taught at the University of Chiang Mai, National University of Singapore and the University of Hong Kong.

Weathering extremities

He cautions that humankind might have to brace for the proliferation of invasive species, increased fragmentation of natural habitats and decline in native species.

"Climate models predict a 1°C to 2°C warming in the tropics by 2050 and between 2°C and 5°C by 2100, depending on assumptions being made about future greenhouse gas emissions. Hence, in 50 years, Malaysia will experience warmer weather than at any time in the last five million years," he says. He adds that it gets warmer relatively slower and a lot more irregular in the tropics than the northern hemisphere; he believes the irregularity

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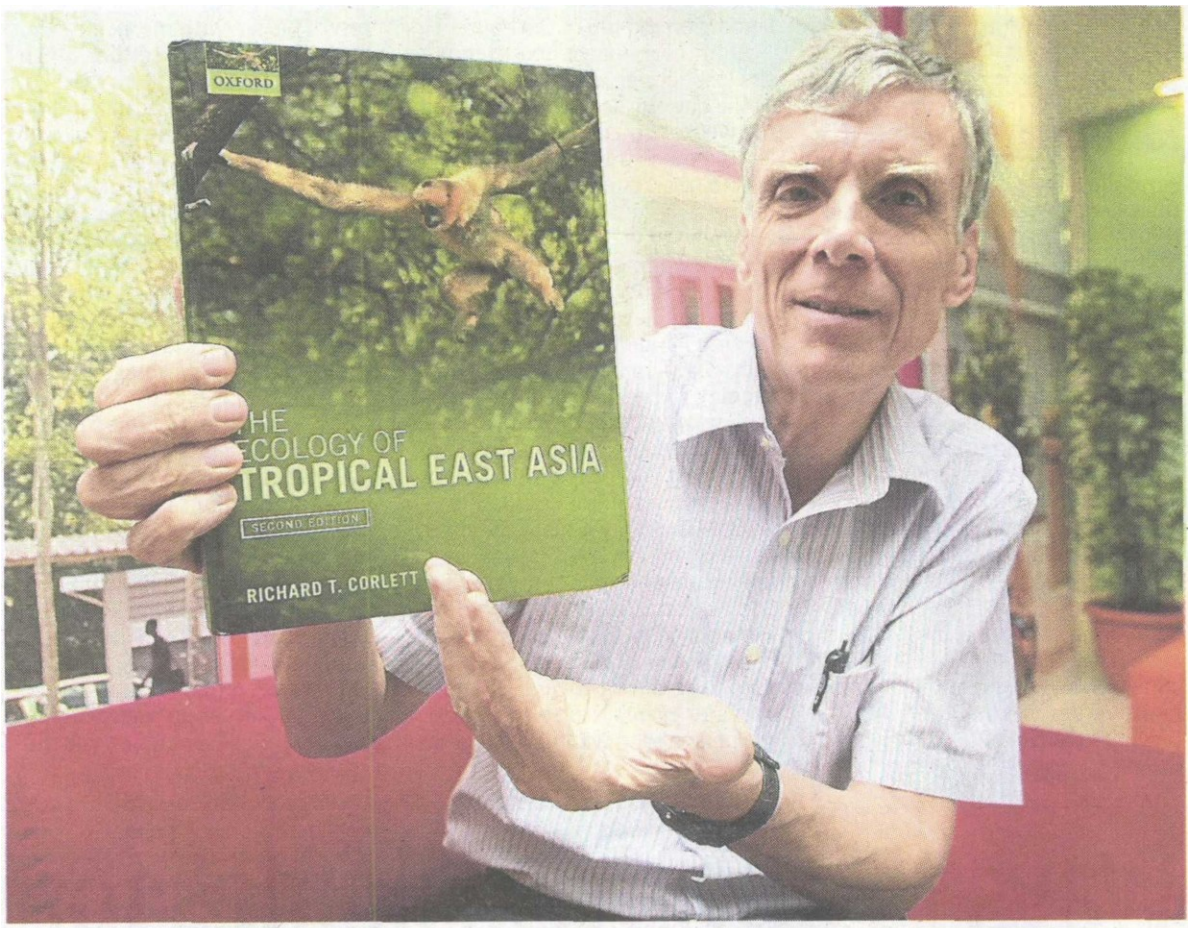
is mostly caused by the El Nino cycle which produces hot weather in the tropics.

He hopes his 240-page book will prove useful in training a new generation of ecologists and conservation biologists in the region. This version covers the topic of climate change and includes new research on north-east India, Bhutan and south-west China, where he now resides. Terrestrial species are mostly touched on in the book, which includes biases towards Corlett's research interests like pollination, seed dispersal and practical conservation.

He says the 2013 International Union for Conservation of Nature's Red List of Threatened Species shows these Malaysian wildlife are threatened: mammals (71 species), birds (45), reptiles (28), amphibians (47), invertebrates (227) and plants (705). Four years ago, the figures were: mammals (70), birds (42), reptiles (21), amphibians (47), invertebrates (211) and plants (685).

"All these species require urgent protection but evidently, they reflect the state of knowledge. The figures are probably good for birds and for the plant species that the Forest Institute of Malaysia (FRIM) has looked at, but less reliable for other groups. In fact, the number of invertebrates is certainly too low, but for many groups of invertebrates, we don't have good enough information," says Corlett.

He proposes that ex-situ conservation of endangered species (ex-situ means off-site conservation outside natural habitats) be improved while species are reintroduced where possible and appropriate.



Green guide: Dr Richard Corlett's book, *The Ecology Of Tropical East Asia*, is widely used as a reference book in universities. – MUHAMAD SHAHRIL ROSLI/The Star.

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Tropical East Asia today has just 40% of its original forest cover. – Filepic