

# NATURE WATCH

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## ARCTIC FOXES *of* NORWAY



**Saving the Singapore Freshwater Crab**  
**The Ancient Wildlife Trade**  
**in Southeast Asia**







## The Ancient Wildlife Trade in Southeast Asia

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# From Zhao Rugua to Tome Pires

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Over the years *Nature Watch* articles have featured the impact of the ongoing wildlife trade in the region. Now **Yong Ding Li** casts a different light as he painstakingly explores the historical dimension of the trade, with case studies of particular well-known animals, producing a possible shift in our understanding of the contemporary situation.

Photos by **Abdelhamid Bizid**, **Bjorn Olesen** and **Yong Ding Li**

**T**he modern wildlife trade is widely considered by conservationists to be among the gravest threats to biodiversity, alongside the human-driven loss and degradation of our forests, wetlands and marine environment. Southeast Asia is recognised by experts as a global hotspot for biodiversity and remains (at least for now) home to some of the richest bird and mammal assemblages in the world. Yet wildlife in this part of the world has been harvested for centuries, although doubtlessly more so today than ever before, leading to widespread “defaunation” as leading conservation biologists have warned.

Over the last 50 years Southeast Asia has become notorious as a hub and transit point for much of Asia’s trade in wildlife. Every now and then, stories of intercepted consignments of smuggled wildlife, including anything from cockatoos, tortoises to pangolins, are reported by newspapers from Thailand to Indonesia.

Conservationists have found numerous lines of evidence to implicate the role of the wildlife trade in driving species towards extinction. One of the best case examples is the trade in rhinoceros horn (as a medical product), driven by the demand in China, Vietnam and elsewhere in Asia. Such an illicit trade has encouraged rampant poaching of rhinoceros and has effectively decimated the populations of two of Asia’s three rhinoceros species. In 2010, conservationists mourned the demise of Vietnam’s and, by extension, mainland Southeast Asia’s last Javan Rhinoceros. Two years later, surveys confirmed what many feared: Malaysia’s forests were also, for the first time in history, devoid of rhinoceros.

Today, public awareness of the wildlife trade and its impact on biodiversity is probably at its greatest in recent history. Yet, there is surprisingly

little realisation that the decline of many animal species may have taken root centuries ago, spurred by the growth in pre-modern trade and consequent unsustainable harvesting. The establishment and expansion of maritime and land-based trade routes (including the various land and maritime Silk Roads) across Asia over a millennia ago created new trade opportunities and markets for products of medicinal and religious value, or exotic products and objects with use as status symbols. Trade routes also brought plants and animals from distant lands that became subjects of curiosity and intrigue in their host countries and courts.

#### Historical Records

The world ten centuries ago was vastly different from today. Some documentation of its wildlife exists in various forms, but not in the volume, quality

and variety that we now have. For many of Southeast Asia’s ancient kingdoms and cities, there were few writings on types of wildlife traded, not to even mention the animals that occurred in the wild.

In contrast, the rich records kept by Chinese, and subsequently Portuguese travellers to the region, as well as officials in the Song, Yuan, Ming and Qing courts, not only chronicled trade, but at times also provided an intriguing insight on what was known of the fauna and flora of Southeast Asia, and the occurrence of this in the export trade.

Despite their incomplete nature, such documentation of the pre-modern trade in wildlife can shed light on the animals and plants sought after by people living in those times, the economic uses of wildlife historically, and whether this has changed over the centuries. These also provide clues on

The casque of the Helmeted Hornbill is solid, unlike that of other hornbills, making it a valuable material for producing fine carvings, ornaments and snuff bottles sought-after in China. In the past eight years, more than 2,500 illegally traded hornbill casques from this species have been seized by authorities in the region.



**A carved Helmeted Hornbill casque.** Photo: Yong Ding Li.

**Facing page: The Helmeted Hornbill is among the rarest of the hornbills in Southeast Asia, with northern Borneo being a stronghold today.** Photo: Bjorn Olesen.



The works of the Song Dynasty official and writer, Zhao Rugua, provided some of the most compelling documentation of the extensive trade between Southeast Asian polities and China. Rhinoceros horns were among the local products traded with kingdoms on mainland Southeast Asia.



Illustration of a Helmeted Hornbill in the Ming era "I-yu-t'u-ch'ih". Source: Moule, A.C. (1925).

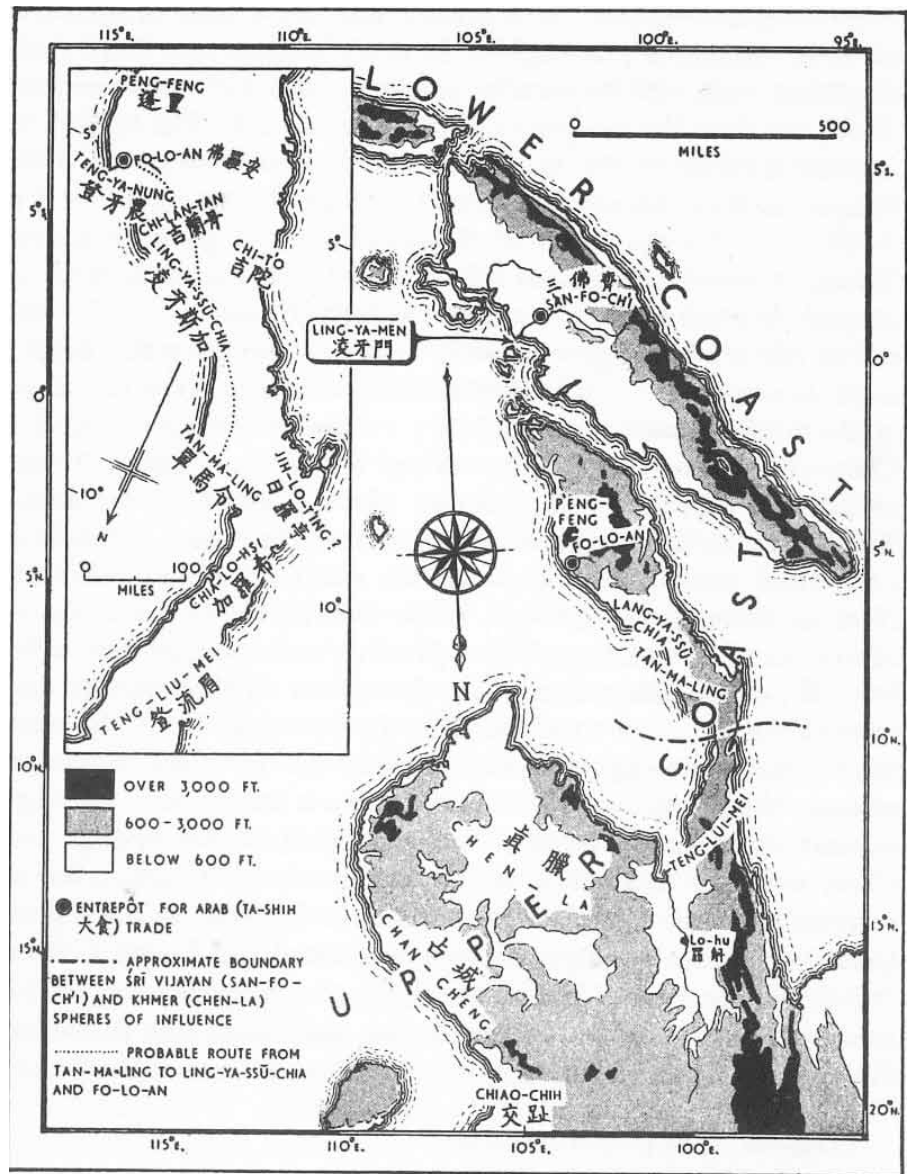
the rarity of certain species, trajectories of future decline, and can guide conservation action.

### Helmeted Hornbill Trade in History

The Helmeted Hornbill (*Rhinoplax vigil*) is among Southeast Asia's most charismatic birds. It is also one of the most threatened. In 2016, the International Union for Conservation of Nature (IUCN) raised its threat status three levels from Near Threatened to Critically Endangered.

Recent investigations by conservationists have revealed a drastic and unsustainable harvest of these spectacular birds for their heads in the last few years. The reason for their demand? The casque of the Helmeted Hornbill is solid, unlike that of other hornbills, making it a valuable material for producing fine carvings, ornaments and snuff bottles sought-after in China. In the past eight years, more than 2,500 illegally traded hornbill casques from this species have been seized by authorities in the region.

The demand for the Helmeted Hornbill dates back over a millennia, having waxed and waned with demand



Major polities which China traded with in mainland Southeast Asia and the Malay Peninsula based on Wheatley (1961). Permission to reproduce image by the University of Malaya Press.

in imperial China. Old texts dating from Chinese sources add confusion to our understanding of the trade in Helmeted Hornbill parts by using different terms – “crane crests” or “ho-ting” (鶴頂) and “meng-tong” (鶯瞳) – to refer to hornbills and their skulls. This is inevitable since such descriptions well pre-date the taxonomic classification system developed by Carl Linnaeus by many centuries.

A description in the “Ying-yai-sheng-lan” (瀛涯勝覽; “The overall survey of the ocean’s shores”) compiled by renowned Ming Dynasty traveller to Southeast and Southeast Asia, Ma Huan (c. 1430) described the “ho-ting” from Jiu-gang (Palembang) as “as large as a duck, with black feathers, long neck and pointed bill. The bone on the crown of the head is more than an inch thick, red outside, and with the lustre of yellow wax

inside.” Together with a line drawing showing a “ho-ting” with a long tail published in the “I-yu-t’u-ch’ih” (異域圖志) from the Ming period and a fairly detailed description of its source to include places in Borneo, Sumatra and the Malay Peninsula (such as Malacca), we may conclude (without the luxury of field guides) that the authors were indeed referring to the Helmeted Hornbill, and that the bird was already reasonably well known in China in the 1400s.

Some of the best documentation of the trade in (Helmeted Hornbill) casques came from Chinese records from the 13th century, where it was recognised by chroniclers as a major export item from the Thai-Malay Peninsula. During the Yuan Dynasty, the “Dao-yi-chih-lue” (島夷誌略; “Description of the Barbarians of the Islands”), compiled by the well-known traveller Wang Dayuan, was one of the most comprehensive accounts of trade between China and Southeast Asian polities. Wang sailed through Southeast Asia in the 1330-1340s and provided a detailed description of the economic products exported by the different states in Southeast Asia. At the country of Tan-ma-ling (southern

Thailand or Pahang?), Wang reported that indigenous products included “pearl camphor, turtle’s carapace, hornbill casques and lakawood”. Hornbill casques were also mentioned as an export item from the states of Chi-lan-tan (present-day Kelantan), Lung-ya-hsi-chiao (Langkasuka, near present day Pattani in Peninsular Thailand) and Pan-tsu (Pancur? on Singapore island). It was noteworthy that hornbill casques from Pancur were identified as among the finest in the region.

Beyond the Malay Peninsula, historical records also suggests a trade in hornbill casques between Sumatra (Palembang), Borneo and China. “Hornbill beaks” were identified as one of the local tribute items sent by the King of Bo-ni (Brunei?) to the Yongle emperor in China via ports in Fujian in 1408 in the “Ming-shi-lu” (明實錄; “Veritable records of the Ming Dynasty”), the most important historical source for the Ming Dynasty. While it is now increasingly unclear whether the state of Bo-ni indeed referred to Brunei, as popularly thought, historians agree that it lies somewhere on Borneo. According to the “Record of the Customs of the Tributaries in the Western Ocean” (西洋朝貢典錄) published in 1520,

Huang Shengzeng reported on Bo-ni that “*Their tribute products were as follows: pearls, ... camphor, chipped camphor, plum blossom camphor, incense, high-quality agarwood (gaharu), sandalwood incense, cloves, cardamom, bee’s wax, rhinoceros horn, tortoise shell, carapaces, snail shells, hornbill beaks, bearskins, peafowl...*”.

### Rhinoceros on the Edge

Asia’s three rhinoceros species are all in trouble. The Sumatran and Javan Rhinoceros are on the brink of extinction; both are now classified as Critically Endangered by the IUCN.

The Javan Rhinoceros (*Rhinoceros sondaicus*) is perhaps aptly named in terms of modern circumstances, but was formerly widely found in Southeast Asia, India and southern China, thus its earlier names of Asian (or Lesser) One-horned Rhino. Records in Peninsular Malaysia existed up to the 1900s (including the famous Pinjih rhino shot by George Maxwell).

Likewise, the Sumatran Rhinoceros (*Dicerorhinus sumatrensis*), also known as the Asiatic Two-horned Rhino, was widespread in the region to as far north as Myanmar, but is now virtually gone from much of Southeast Asia. The last remaining populations are precariously hanging on to protected areas in Sumatra and Indonesian Borneo.

Far less is known about the earlier distribution or fate of the Greater One-horned (or Indian) Rhinoceros (*Rhinoceros unicornis*) which occurred historically in parts of mainland Southeast Asia.

There is considerable evidence that rhinoceros (likely all three species) have been hunted and traded by people in Southeast Asia in the past thousand years. Much of this is documented in historical records by Chinese and Portuguese travellers cataloguing indigenous export products coming out of Southeast Asia. Together with elephant ivory (from the Asian Elephant), rhinoceros horn was perhaps the most widespread and prominent wildlife product from the region.



**The Asian One-horned Rhino once occurred in mainland Southeast Asia, but is now long extirpated from the region.** Photo: Bjorn Olesen.



During the Song Dynasty, the Song Annals (宋史) described rhinoceros horn, together with various fragrant woods to be among products traded with Southeast Asian states, and occasionally through the Arabs.

The works of the Song Dynasty official and writer, Zhao Rugua (or Chau Ju-Kua), provided some of the most compelling documentation of the extensive trade between Southeast Asian polities and China. Rhinoceros horns were among the local products traded with kingdoms on mainland Southeast Asia, notably Kiau-chi (Tongking, present-day north Vietnam) and Changchong (Annam, modern day central Vietnam). Further south on the peninsula, he reported rhinoceros horn as a native product of Tan-maling (Pahang?) and Lung-ya-his-chiao (Langkasuka), as well as Sho-po (Java). On the native products originating from Sho-po, Zhao writes, “*They have also elephants’ tusks, rhinoceros horns, pearls, camphor, tortoise-shell, sandalwood, aniseed, cloves, cardamoms, cubebs, laka-wood...*”. Rhinoceros horns (most probably from the Sumatran Rhinoceros since only one species was found in Borneo) was also exported by Bo-ni (on Borneo), as reported in the Ming era “Customs of the Tributaries in the Western Ocean”.

### Trade in Parrots and Kingfishers

Compared to the Helmeted Hornbill, documentation of the pre-modern trade in other bird species in Southeast Asia was limited. Parrots were perhaps the best known group of birds in this respect with cockatoos, parakeets, lorikeets, lories and hanging-parrots (referred to as daoguaniao or 倒掛鳥) all identifiable from old illustrations and descriptions, together with kingfishers, cassowaries and birds-of-paradise.

Among the earliest documentation available, reports of parrots of two varieties, “*of variegated plumage, and white*”, were sent to the Tang court during the reign of Emperor Taizhong (626-649). During the Song period, “*white parrots that could speak*”

were reported for sale in Canton (Guangzhou) in the “Ping-zhou-ke-tan” (萍洲可談), compiled from 1111 to 1117, while a well-known illustration of a parrot by Emperor Huizong almost certainly referred to an Ornate Lorikeet (*Trichoglossus ornatus*) from Sulawesi. These provide multiple lines of evidence of a trade in wildlife connecting ancient China and polities in modern day Indonesia or the Philippines (where cockatoos and lorikeets occur widely). Zhao Rugua also identified parrots among the products obtained from Chan-Chong (Annam, currently central Vietnam) and Sho-po (Java), likely involving parakeet or hanging-parrots, which are the most ubiquitous kinds of parrots in these regions.

Focusing on the foreign trade in Malacca during the 1500s, Portuguese traveller Tome Pires, in the Suma Oriental, listed parrots as among items traded in Malacca to have originated in the Moluccas and New Guinea. In the chapter covering the Moluccas in the Suma Oriental, Pires wrote, “*a great many parrots come from the islands of Morotai (various lories and lorikeets), and the white parrots come from Seram (Salmon-crested Cockatoo, only cockatoo present there)*”, while also referring to Bacan as another source of parrots.

**Right: The Yellow-crested Cockatoo (illustrated during the reign of the Yongzheng Emperor, Qing period) were known in the courts in ancient China long before they were described by western science.**

Source: Qin et al. 1999.



While parrots traded hailed from the islands of the Malay Archipelago and some parts of Indochina, kingfisher feathers were an export mostly from Indochina, particularly Chon-la (Cambodia) and Kiau-chi (north Vietnam). Zhao Rugua wrote that, “*Tsui-mau, or kingfishers’ feathers, are got in great quantities in Chon-la*”. Kingfisher feathers, were documented by various sources, including the Song Annals to be used in making ornaments and as dress material for officials of high standing. It will never be known which species were targeted, but thankfully for kingfishers, the Song Emperor (Zhenzong) issued an edict in 1107 forbidding the use of kingfisher feathers, and partly reducing the demand for kingfishers in the process.

### Lessons Learnt

Our knowledge of the trade in wildlife and their derivatives in Southeast Asia dates back well over 1,500 years into the Tang Dynasty. While rhinoceros horn (species undetermined), and Helmeted Hornbill casques, together with elephant ivory formed some of the best documented examples of this historical trade, there is also numerous (albeit patchy) evidence for the trade in other wildlife and their parts, includ-



**Peafowl (possibly Green Peafowl) were tribute items in ancient Southeast Asia.**  
Photo: Abdelhamid Bizid.

ing peafowl (Green Peafowl?), parrots, kingfishers, turtle shells and bezoar stones. This tops off the long list of plant products that were widely traded, including anything from Bornean camphor to agarwood. However since much of these pre-dated the discipline of taxonomy, there will remain large gaps in our understanding of how much trade in these different animals (and their products) happened then.

Noting the many gaps in knowledge (and we will never know the complete picture), the pre-modern wildlife trade raises two insights for modern conservation. Firstly, the trade in wildlife and wildlife products was reasonably developed in Southeast Asia well before European colonisation of the region, and already affecting a number of different bird, mammal and reptile species. This trade was likely responsible for the slow and sustained defaunation of Southeast Asia's forests. For the case of species in demand in the regional trade, such as Helmeted Hornbill and Southeast Asia's three rhinoceros, it may be that historical hunting pressures (to meet pre-modern trade demand) exerted long-lasting impacts on the populations of these species. What we know of the distribution and abundances of such species from more modern sources may therefore not be as accurate as popularly assumed.

By this token, the fact that Helmeted Hornbills are less abundant than other hornbill species (and that rhinoceros occur at very low densities in the region), may be in fact a legacy of centuries of hunting pressure.

What is more a concern, however, is that the wildlife trade in Southeast Asia has persisted for a remarkably long time and into the modern-day, and affecting a number of the species that are still traded today. The undeniably persistent nature of the wildlife trade demonstrates that our conservation interventions tackling this insidious issue need to be doubled, alongside efforts to further address the socio-economic forces that drive the trade. 🌿

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