

The status of the Himalayan Griffon *Gyps himalayensis* in South-East Asia

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The Himalayan Griffon *Gyps himalayensis*, a large scavenging raptor previously known to be resident to the Sino-Himalayas and Central Asia, is increasingly being recorded throughout South-East Asia. It now been recorded in six South-East Asian countries and is represented by a total of over 30 documented records, mostly of immature birds. The causes for the increase in sightings are unknown, but we speculate that climate change, deforestation and hunting, coupled with natural patterns of post-fledging dispersal and navigational inexperience may be contributing to this change.

INTRODUCTION

The Himalayan Griffon *Gyps himalayensis* is a poorly known vulture, formerly accepted as resident or migrating only altitudinally within Sino-Himalaya and Central Asia (Thiollay 1994, Grimmett *et al.* 1999, Ferguson-Lees and Christie 2001). This vulture has now also been found in continental South-East Asia (e.g. Wells 1999, Robson 2002, Gilbert *et al.* 2006). Since 1979, over 30 instances have been reported in Myanmar, Thailand, Cambodia, Peninsular Malaysia and Singapore (e.g. Lim 1998, Wells 1999, Robson 2002, Gilbert *et al.* 2006, Tordoff *et al.* in press), with recent anecdotal evidence of occurrence in neighbouring north-west Indonesia (K. C. Tsang *in litt.* 2008). Most of these records occurred during the boreal winter and, where age was determined, involved immature individuals, including apparent juveniles. The complete absence of earlier reports from the region suggests new outward dispersive behaviour, although observer coverage has been generally poor in the past.

Range and biology

Himalayan Griffon is the largest Asian *Gyps* vulture (Thiollay 1994) and second largest regional raptor after the Cinereous (Monk) Vulture *Aegypius monachus*. Its main geographical range consists of the high uplands of central and southern Asia, from Kazakhstan and Afghanistan in the west through the Altai and Tien Shan ranges, Tibetan plateau and Himalayas east to western China (Yunnan, Sichuan, Qinghai, Gansu, Ningxia) and Mongolia (Ali 1962, Ali and Ripley 1968, Meyer de Schauensee 1984, Inskipp and Inskipp 1985, Knystautas 1993, Thiollay 1994, Grimmett *et al.* 1999, MacKinnon and Phillipps 2000, Ferguson-Lees and Christie 2001). According to latitude, breeding occurs at elevations of between 600 and 4,500 m. Foraging birds are seen as high as 5,000 m or more and non-breeding altitudinal migrants spend the boreal winter down to plains level, having been recorded as low as 175 m near Bharatpur, eastern Rajasthan, India, immediately south of the Himalayas (Ferguson-Lees and Christie 2001).

As with other *Gyps* vultures, Himalayan Griffons are mainly specialists on large mammal (including livestock) carrion, their food being found visually while soaring, either directly or by monitoring other scavenging birds, e.g., other vultures and corvids. Their large body-size confers feeding dominance over other vulture species in mixed gatherings at a carcass, except in the presence of

Cinereous Vulture (Thiollay 1994, Grimmett *et al.* 1999, Ferguson-Lees and Christie 2001).

OCCURRENCE IN SOUTH-EAST ASIA

The synopsis of records of the Himalayan Griffon presented here draws on published data and correspondence with review committees and individual observers. It includes only those records that are reliably and adequately documented. From 1979 to 2008 there were over 30 records, involving many more individual vultures, in possibly increasing numbers, and from all countries of political South-East Asia except Laos and Vietnam. More than half (i.e., 16 records) came from Thailand (P. D. Round *in litt.* 2007), where observer coverage has been extensive for a good part of this period. In descending order by country, the rest were from Singapore (8 records), Peninsular Malaysia (5), Myanmar (4), Cambodia (3), and Indonesia (1). These records are listed with their corresponding sources in Table 1. Elsewhere, recent occurrence away from the breeding range has also been reported at Jinju, South Korea, apparently for the first time in north-east Asia (C. Moores *in litt.* 2007). Here we present an account of the South-East Asian records, organised by country.

Myanmar

Myanmar, whose territory is geographically nearest to the Himalayas, surprisingly has no historical records of Himalayan Griffon (Smythies 1953, King *et al.* 1975, Robson 2000, 2002). The first national records were reported during a series of avifaunal surveys in Kachin state, northern Myanmar, during November–December 2004 (Tordoff *et al.* in press), comprising a single individual over Kamaing town on 6 December 2004, and groups of 11 and 23 individuals mingling with other *Gyps* vultures at Indawgyi and Mogaung Chaung respectively. Subsequent surveys using designated vulture restaurants to assess populations of resident vulture species in Kachin state have found large numbers of Himalayan Griffons. As many as 93 individuals, including many juveniles, were detected during December 2006, and the species was present at 60% of the sites sampled (Eames 2006, 2007), suggesting that this species is more regular and abundant in Myanmar than formerly thought. In view of its geographic proximity to the Sino-Himalayas, large land area, generally low observer coverage, and the large numbers of birds recorded particularly in the 2006 surveys,

Himalayan Griffons may well have passed through, wintered and, in remote mountainous areas in the north, even been resident without being detected.

Thailand

Some of the earliest reports of the Himalayan Griffon were of captives held in Dusit (Bangkok), Chiang Mai and other zoo collections whose dates and places of capture were not recorded. This also included one bird at Siam

Farm, a wildlife trading company located in Bangkok. This record is dated 29 October 1981 and the bird was purportedly captured in the province of Khon Kaen (P. D. Round *in litt.* 2007). Wild sightings, many supported by photographic evidence, have tended to concentrate in the mountainous north-west (e.g., at Doi Pha Hom Pok, Doi Ang Khang, and Mae Ngao National Park and coastal lowlands of the south (e.g., Khao Sam Roi Yot National Park and in Phuket and Trang provinces), but also include

Table 1. Summary of records of Himalayan Griffon *Gyps himalayensis* in South-East Asia.

Country/Date	Locality (Province/State)	Numbers	Age class	Source
Myanmar *				
30 November 2004	Indawgyi, (Kachin)	11	4 adult, 7 subadults	Tordoff <i>et al.</i> in press
6 December 2004	Kamaing (Kachin)	1	adult	Tordoff <i>et al.</i> in press
6 December 2004	Mogaung Chaung (Kachin)	23	2 adults, 21 subadults	Tordoff <i>et al.</i> in press
5–6 December 2006	Nawn Kwin (Kachin)	10	All juveniles	Eames (2006)
8–10 December 2006	Indawgyi (Kachin)	6	All juveniles	Eames (2006)
Thailand				
29 October 1981	Not known (Khon Kaen)	1	no details	BCST (P. D. Round <i>in litt.</i> 2007)
Undated	Not known (Buriram)	1	no details	BCST (P. D. Round <i>in litt.</i> 2007)
Undated	Not known (Chiang Mai)	1	no details	BCST (P. D. Round <i>in litt.</i> 2007)
January 1987	Karon Bay (Phuket)	1	no details	BCST (P. D. Round <i>in litt.</i> 2007)
21 December 1989	Sukhumvit Road (Bangkok)	7–8	no details	BCST (P. D. Round <i>in litt.</i> 2007)
22 December 1989	Sukhumvit Road (Bangkok)	1	no details	BCST (P. D. Round <i>in litt.</i> 2007)
7 January 1990	Khao Sam Roi Yot (Prachaup Khiri Khan)	1	no details	BCST (P. D. Round <i>in litt.</i> 2007)
Undated	Doi Pha Hom Pok (Chiang Mai)	1	no details	S. Pluemshosak (P. D. Round <i>in litt.</i> 2007)
December 2004	Doi Pha Hom Pok (Chiang Mai)	1	no details	M. Davies and D. Damlamajak (P. D. Round <i>in litt.</i> 2007)
12 December 2004	Not known (Phang Nga)	1	no details	S. Rungkunakorn (P. D. Round <i>in litt.</i> 2007)
12 December 2006	Doi Lang, (Chiang Mai)	3	no details	T. Saengdokmai <i>in litt.</i> 2006, Round (2007)
29 December 2006	Doi Ang Khang, (Chiang Mai)	2	no details	R. Kaichid and J. Svensson <i>in litt.</i> 2007
23 January 2007	Yan Tah Kao, (Trang)	5	4 juveniles, 1 not aged	P. Padungthin <i>in litt.</i> 2007
15 December 2007	Doi Lang (Chiang Mai)	2	1 juveniles, 1 subadult	Kasorndorkbua (2008)
30 December 2007	Doi Lang (Chiang Mai)	8	7 juveniles, 1 subadult	Kasorndorkbua (2008)
30 December 2007	Mae Ngao National Park (Mae Hong Son)	18	2 juveniles, 1 subadult, 15 not aged	Kasorndorkbua (2008)
7–8 March 2008	Khao Yai National Park, (Nakhon Ratchasima)	1	juvenile	Kasorndorkbua (2008)
Cambodia				
30 December 2004	Chhiep (Preah Vihear)	1	juvenile	Gilbert <i>et al.</i> (2006)
24 February 2007	Chhiep (Preah Vihear)	1	juvenile	P. D. Round <i>in litt.</i> 2008
11 January 2008	Chhiep (Preah Vihear)	1	juvenile	J. Eaton <i>in litt.</i> 2008, B. W. Low <i>in litt.</i> 2008
Peninsular Malaysia				
24 June 1979	Sungei Paka (Terengganu)	1	'immature'	Wells (1999)
20 January 1995	Muar (Johore)	1	juvenile	Jeyarajasingham and Pearson (1999), Wells (1999)
13 February 2004	Putrajaya Wetlands (Federal Territory)	1	juvenile	W. C. Cheong <i>in litt.</i> 2007
January 2006	Batu Pahat (Johore)	1	juvenile	W. C. Cheong <i>in litt.</i> 2007
25 January 2008	Johor Bahru (Johore)	1	no details	J. Heng <i>in litt.</i> 2008
Singapore				
December 1989	Tuas	4	'immatures'	Wells (1999)
12 January 1992	Bukit Timah Nature Reserve	9	all juveniles	Lim (1998), Wells (1999)
9 January 2005	Kent Ridge–Orchard Road	2	all juveniles	Habitatnews (2005), Wang and Hails (2007)
23 January 2006	Changi Cove	1	juvenile	Habitatnews (2006), Wang and Hails (2007)
29 December 2006	Ang Mo Kio	1	'immature'	A. Chia <i>in litt.</i> 2006
2 January 2008	Seletar	1	juvenile	T. K. Lee <i>in litt.</i> 2008
23 January 2008	Bukit Batok Nature Park	3	all juveniles	T. K. Lee <i>in litt.</i> 2008
2 February 2008	Braddell	1	no details	A. Ng <i>in litt.</i> 2008
Indonesia				
November/ December 2007	Nirvana Gardens, Bintan, (Riau Islands)	1	juvenile	K. C. Tsang <i>in litt.</i> 2008

*We are not able to trace detailed records for Myanmar from after 2006

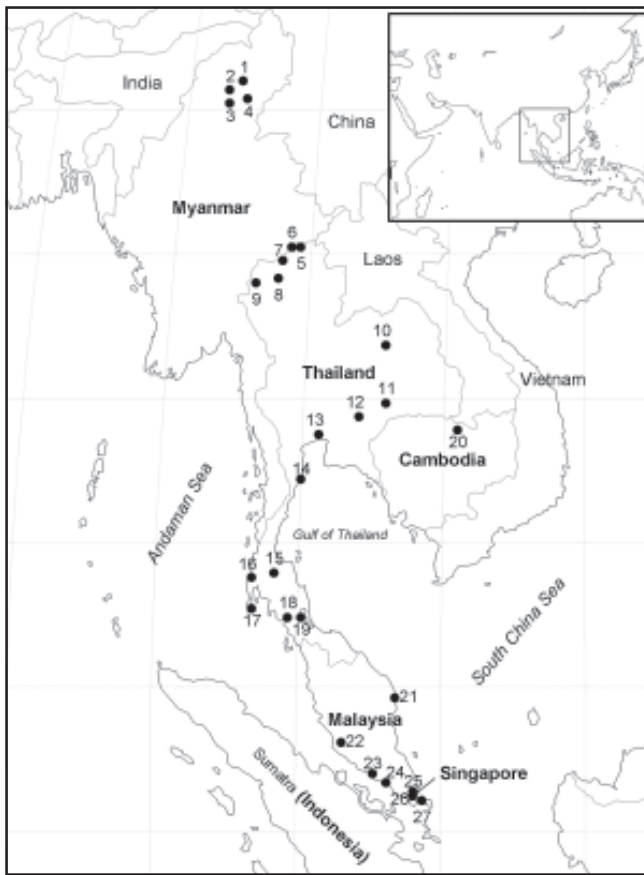


Figure 1. Distribution of records of Himalayan Griffon *Gyps himalayensis* across South-East Asia. Myanmar: 1 Kamaing, 2 Nawn Kwin, 3 Indawgyi, 4 Mogaung Chaung; Thailand: 5 Doi Lang, 6 Doi Pha Hom Pok, 7 Doi Ang Khang, 8 Chiang Mai, 9 Mae Ngao National Park, 10 Buri Ram, 11 Khon Kaen, 12 Khao Yai National Park, 13 Sukhumvit (Bangkok), 14 Kham Sam Roi Yot, 15 Surat Thani, 16 Phang Nga, 17 Karon Bay (Phuket), 18 Yan Tah Kao (Trang), 19 Patthalung; Cambodia: 20 Chhep (Preah Vihear); Malaysia: 21 Sungei Paka (Terengganu), 22 Putrajaya Wetlands, 23 Muar, 24 Batu Pahat, 25 Johor Bahru; Singapore: 26 Singapore; Indonesia: 27 Bintan island.

a well-documented group of eight that appeared over the Sukhumvit road area of central Bangkok in 1989. As elsewhere, frequency of occurrence has increased and from 2004 onwards records became near-annual, with an all time high of four sightings in the winter of 2007–2008, involving nearly 30 individuals in total, including many juveniles (Round 2006, 2008, Kasorndorkbua 2008). The Doi Pha Hom Pok–Doi Lang massif along the Thai–Burmese border, well-covered by local birdwatchers, has seen the regular occurrence of Himalayan Griffons in recent years, with eight recorded in December 2007. The country's largest spot count, however, comes from Mae Ngao National Park, Mae Hong Son province, c.100 km west of Doi Pha Hom Pok, where two juveniles, one subadult and 15 birds of unknown age were seen in December 2007. As suggested by the many recent records near the northern end of the Thailand–Myanmar border, Himalayan Griffons were probably dispersing out of Myanmar, hence suggesting a link with the large numbers seen in Kachin state, Myanmar.

Cambodia

Occurrence has only very recently been documented, with a first national record from Chhep in the northern province

of Preah Vihear in 2004 (Gilbert *et al.* 2006). Later, there were sporadic sightings of single individuals at the same site during the winters of 2006–2007 (T. Clements *in litt.* 2008, P. D. Round *in litt.* 2008) and 2007–2008, when possibly the same individual was seen a number of times by different visiting birding groups (J. Eaton *in litt.* 2008, B. W. Low *in litt.* 2008). This site, which is near the Cambodia–Laos border, is also the location of a regular vulture restaurant and is attended by large numbers of resident Indian White-backed *Gyps indicus*, Slender-billed *G. tenuirostris* and Red-headed Vultures *Sarcogyps calvus*. Regular provision of cattle carcasses here may benefit Himalayan Griffons as well.

Peninsular Malaysia

Records here include the only sighting made outside northern winter months: an exhausted bird (specimen now in the collection of the Malaysian Federal Wildlife Department) captured at Sungei Paka, Terengganu state, supposedly in late June 1979 (Wells 1999). This is the only record from east of the Main Range in the Peninsula. All others have been from the west coast plain. A lapse of nearly 15 years occurred before the second record, of one individual captured in Muar, Northwest Johore state and taken into captivity at the Melaka Zoo in 1995 (Jeyarajasingham and Pearson 1999). The third was of one rescued from the Putrajaya Wetlands Reserve, Federal Territory and taken to Melaka Zoo in February 2004 (W. C. Cheong *in litt.* 2008). Subsequently, sightings of single individuals have been reported from Batu Pahat, also in Northwest Johore (W. C. Cheong *in litt.* 2007) and one soaring over the coast at Johor Bahru, South Johore (J. Heng *in litt.* 2008).

Singapore

Two sightings of 'large vultures' made at Changi, eastern Singapore, in 1999 and 2007, submitted without details, supplement the eight accepted Singapore records, these all occurring within a three-month window from mid-December to February. According to Wells (1999), the earliest documented occurrence was in December 1989: four individuals on open, reclaimed land at Tuas, Southwest Singapore, of which at least one was captured and still survives in captivity at the Jurong bird park. Subsequently, a group of nine, the largest-ever count for Singapore, settled in Bukit Timah Nature Reserve in January 1992 (Lim and Gardner 1997, Lim 1998, Wang and Hails 2007). After a long interval (13 years if the unconfirmed 1999 Changi record is omitted) two juveniles were seen in suburban southern Singapore in January 2005 (Habitatnews 2005), and 1–2 individuals have been reported in both subsequent winters. In all cases these have included starved birds, all juveniles too weak to fly and soon taken into captivity for veterinary management (J. Cheema verbally 2007). There were separate reports during the winter of 2007–2008, compared with only single records in the previous years, suggesting that in Singapore, too, frequency of occurrence is increasing.

Indonesia

A Himalayan Griffon (identification supported by photographs) has recently been reported to be held captive in a private collection on Bintan Island, Riau Islands province, Sumatra (K. C. Tsang *in litt.* 2008). In correspondence, the owner claimed it was caught while

attempting to feed on carcasses at a local pig farm in December 2007. While no conclusive proof of wild rather than 'imported' origin is available, Bintan is only a short distance south of Peninsular Malaysia and Singapore, and the nearly 50 km water gap is probably easily crossed by a soaring bird.

DISCUSSION

Possible reasons for occurrence in South-East Asia

Despite its large size and detectability, the striking lack of mention of Himalayan Griffon in all except recent South-East Asian ornithological literature suggests that this species was historically absent from the region. Several hypotheses have been proposed to explain this apparent change of status, none based on more than intelligent guesswork, and even circumstantial evidence is lacking because no information is available on the true geographic origin (i.e. the source populations) of the birds involved or on their journey routes. Wells (1999) and Wang and Hails (2007) implicated the bird trade by suggesting the possible escape or release of imported captives. This is now thought unlikely given that large birds held captive for long periods in the confined space of a cage would show damage to flight and tail feathers, and signs of soiling due to faecal contamination. Region-wide, no such damage has been reported either in captured individuals or in wild birds photographed at close range, all of which appeared wound-free and had clean, unabraded wing and tail tips (Wells 1999).

A more likely explanation is the new records natural, involving long-distance dispersal movements over and above the altitudinal migration known to occur around the edge of the breeding range. Several factors could be playing synergistic roles and we suggest a link to the decline of large mammals, leading to food shortage in the breeding range, and resulting in long-distance dispersal of the species. Such a decline of large mammals might be linked to climate change (Barnosky *et al.* 2004, Murray-Clay 2005), perhaps through its impact on natural vegetation in the upper Himalaya and the Tibetan Plateau (e.g. Liu and Chen 2000, Shrestha *et al.* 2004, Zhao *et al.* 2004, Fukui *et al.* 2007). A more likely cause of large mammals decline could be the direct impact of changing wealth, transport and social conditions, and attitudes to the environment, particularly in Tibet and especially in relation to guns and hunting. In the Himalayas generally, the impact of subsistence hunting of large animals is still poorly known (Kaul *et al.* 2004), but two herd-living ungulates endemic to the Tibetan Plateau, Tibetan Gazelle *Procapra picticaudata* and Tibetan Antelope *Panthalops hodgsoni*, are both recorded as having suffered massive range and population contractions in the recent past, attributed directly to over-hunting (Bhatnagar *et al.* 2006). It is thus possible that human hunting pressure through the upland range of the Himalayan Griffon has spawned a poorly monitored yet significant reduction in the availability of wild (as opposed to livestock) carrion. This, in combination with a natural tendency for young birds to disperse away from natal sites (Newton 2007) and to be navigationally inexperienced (Alerstam 2005), could lead to young Himalayan Griffons wandering outside the traditional range of the species, and their appearance in new territories.

Possible movement patterns

As suggested by the spatiotemporal distribution of records throughout South-East Asia and the high frequencies of juveniles or subadults encountered, it appears that there is some form of general movement trend. First, most records throughout South-East Asia occurred within the months (October–March) of the boreal winter in the Himalayas, Tibetan Plateau and central Asia. This means that dispersal movements and patterns of the Himalayan Griffon can at least be circumstantially linked to seasonal changes, perhaps arising as a result of reduced food availability during the winter. Second, the clear age bias towards juveniles and subadults suggests a link with post-fledging dispersal. Immature birds tend to be more inexperienced in foraging and navigation and are thus more vulnerable to straying out of suitable foraging habitat along aberrant flight routes (Alerstam 2005). Third, there is a concentration of records, particularly records involving 'large groups' towards more northerly areas in South-East Asia (e.g. Myanmar, North Thailand) (Table 1). Records involving small groups or single individuals are more spread out elsewhere in South-East Asia. This pattern is probably linked to the breeding range of the Himalayan Griffon, which is located north-northwest of South-East Asia; the concentration of records is towards the fringe of the range rather than farther away. Birds moving southward down the Malay Peninsula and Singapore towards Indonesia could possibly be limited by sea crossings, hence explaining the paucity of Indonesian records (only one so far).

Conservation issues

The current global conservation status category of the Himalayan Griffon is Least Concern (IUCN 2007), although difficulty of access to much of its mountainous range renders population surveys difficult. Unlike other highly threatened *Gyps* spp. of South and South-East Asia (Pain *et al.* 2003, Oaks *et al.* 2004), it is not regarded as seriously exposed to diclofenac poisoning, though this may not apply to the dispersers reaching South-East Asia. What proportion of the total annual production of young fledged these dispersers represent is unknown. The high rate of capture of weakened birds as they move south suggests independently that many or most of these immatures will not make a return journey and hence are lost to the breeding population. Some effort, particularly in Thailand, has been made to rehabilitate and release vultures back into suitable habitat in the north, though this has met with limited success due to veterinary and political concerns. Satellite telemetry tracking (Bögel 1994) would be highly instructive and might even demonstrate that some return movement does occur, but the loss of a Cinereous Vulture shot in Myanmar weeks after its release in Thailand (Casey 2007) highlights the trans-boundary difficulties involved in both this and regional vulture rehabilitation in general.

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