

MIGRATION OF RAPTORS AND DEMOISELLE CRANES OVER CENTRAL NEPAL

Rob G. Bijlsma

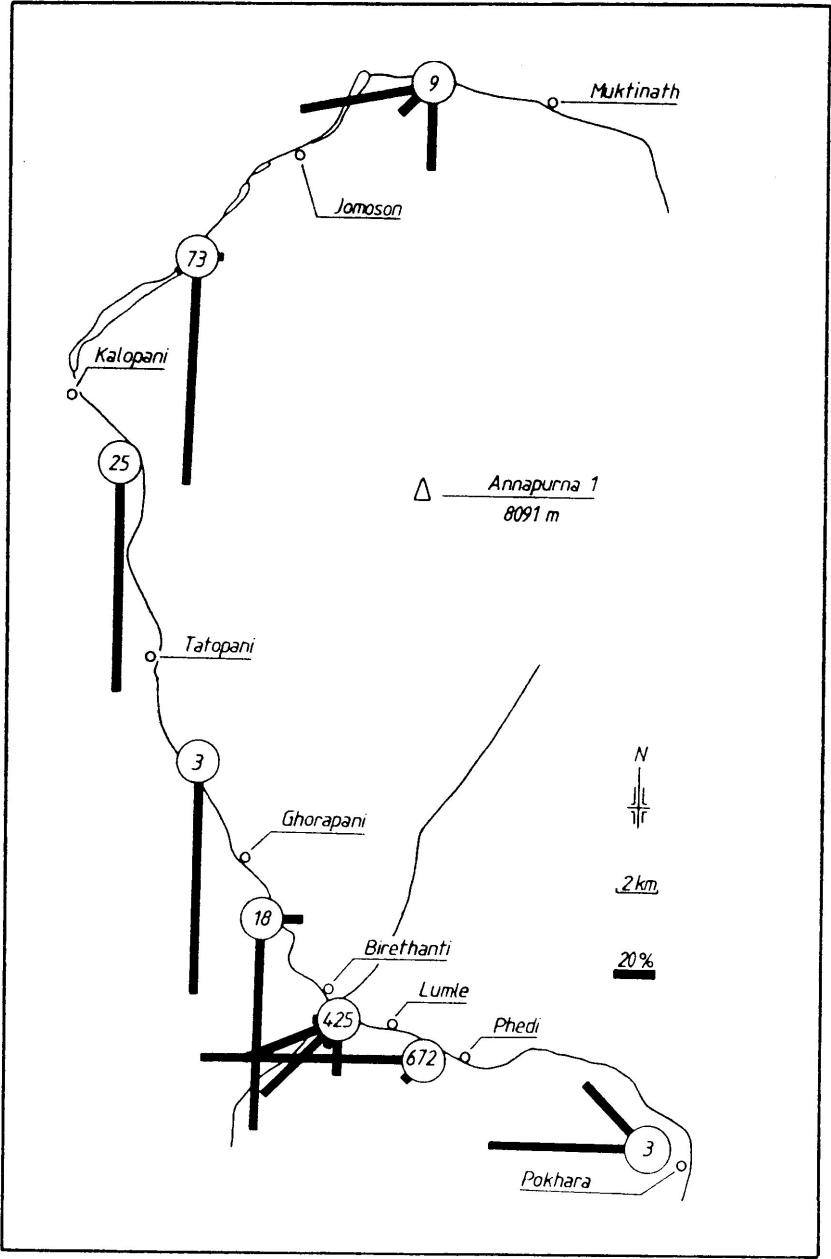
INTRODUCTION

Impressive migration of raptors and Demoiselle Cranes *Anthropoides virgo* is known to occur through or along the Himalayas in Nepal (Ali & Ripley 1978; Fleming, Fleming & Bangdel 1979; Thiollay 1979; Fleming 1983; de Roder 1989). A review of the trans-Himalayan passage of raptors through the Kali Gandaki has been given by Inskipp & Inskipp (1985), including unpublished information collected during 7 October to 4 November 1984 by Steen Christensen, Mogens Henriksen, Kees van Oorde, Frank de Roder and the author. This information will be published here.

AREA UNDER OBSERVATION

Most observations were carried out while trekking from Pokhara (situated 28°14'N, 83°58'E) to Muktinath (28°50'N, 83°52'E) and back again. This trek mainly follows the Kali Gandaki (via Jomoson to Kagbeni). The Kali Gandaki is one of the valleys penetrating the massive Himalayan range. Additional information was gathered in the Kathmandu Valley (27°42'E, 85°19'E) in Kathmandu, Godaveri, Gokarna Safari Park and Jamacho-Hill. The itinerary was as follows: Kathmandu Valley 6-7 October and 1-3 November, Pokhara-Birethanti 10 October and 27-30 October, Birethanti 26 October, Birethanti-Tatopani 11-14 October and 23-25 October and Tatopani-Muktinath 15-22 October.

Figure 1: View of Jomason trek with flight direction of raptors and number of raptors involved (encircled).



METHODS

Counting raptor migration while trekking is impossible. Most raptors were therefore detected during stops along the route, of which there were many. However, when considerable passage of raptors or cranes was noticed, a prolonged stop was made to count migrants systematically. This was the case at Birethanti on 26 October and between Lumle and Phedi on 27 October.

Part of the migration took place at great heights and could be only detected by scanning the sky continuously by eye and with binoculars (10x40B, 10x40B, 10x50, 10x50 and 8x30). This was particularly the case in the valley of the Kali Gandaki.

Especially with the smaller raptor species (*Accipiter*, *Buteo*, *Milvus*, *Falco*), it was often hard to separate residents from migrants. A considerable portion of the *Accipiters* was thought to hunt and rest during migration. For this study, only those birds which were flying purposefully to the south or west, or which were part of a stream of migrants, were ascribed to migrants.

RESULTS

During 25 days between 7 October and 3 November 1984 migration of 1,332 raptors and 8,228 Demoiselle Cranes was noticed. The majority of Demoiselle Cranes passed during mid-October, whereas noteworthy raptor migration was not recorded until the last week of October (Table 1).

Demoiselle Crane *Anthropoides virgo*. Migration of Demoiselle Cranes was only noticed during 13-21 October along the Kali Gandaki from Tatopani northwards to the area between Kagbeni and Muktinath. These birds must have followed the Kali Gandaki further to the south, because we did not observe this species along the Ghar Khala, a tributary of the Kali Gandaki south of Tatopani. The majority of the migrants was observed just south of Ghasa (halfway between Tatopani and Kalopani) on 13 October: between 13.50 and 15.05 (local time) 6,360 Demoiselle Cranes passed due south at great heights. It was a brilliantly clear day with a moderate wind from the south. The next days were overcast with strong winds. Hundreds of Demoiselle Cranes were forced down near Marpha, Jomoson and Kagbeni. Some flocks frequented small agricultural plots, where they ran the risk of human predation. Seven Demoiselle Cranes killed (by boys with catapults) were juvenile. Most birds sought refuge in the upper parts of the Kali Gandaki between Jomoson and Kagbeni. In the latter locality, the river is very broad and the birds were resting on banks in the middle of the river, which was almost run dry. These birds were impossible to approach without disturbance. The number of juveniles was low, for example 21% and 9% in two flocks of 29 and 22 birds respectively near Jomoson on 19 October.

Table 1. Daily totals of migrating Demoiselle Cranes and raptors in the Kathmandu Valley (6-7 October, 1-3 November) and from Pokhara to Muktiyath and vice versa (10-30 October) in 1984.

Month Date	October										November															
	7	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3
<i>Anthropoides virgo</i>	-	-	-	-	6360	15	-	839	414	238	297	31	34	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Milvus migrans</i>	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
<i>Haliaeetus albicilla</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
<i>Haliaeetus</i> sp.	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Neophron percnopterus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	6	-	-	-	-	-	-	-
<i>Aegypius monachus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Circus gallicus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Circus cyaneus</i>	-	-	-	-	-	-	1	-	-	-	2	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-
<i>C. macrourus/pygargus</i>	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-
<i>Accipiter gentilis</i>	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Accipiter nisus</i>	-	-	-	-	-	-	7	1	2	-	-	-	-	1	-	2	1	1	2	-	-	-	-	1	-	-
<i>Accipiter</i> sp.	-	1	-	-	4	-	-	-	1	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Buteo buteo</i>	-	-	-	2	1	-	2	7	-	-	-	2	1	-	-	3	2	3	1	-	-	-	-	-	-	-
<i>Buteo rufinus</i>	-	-	-	-	-	-	1	3	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Buteo</i> sp.	-	5	-	-	-	-	-	1	-	-	1	1	-	1	1	1	-	-	-	-	-	-	-	-	-	-
<i>Aquila rapax nipalensis</i>	1	1	-	-	4	4	-	2	-	-	5	11	5	3	-	-	27	222	817	4	2	-	3	17	35	-
<i>Aquila heliaca</i>	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Aquila</i> sp.	-	-	-	-	-	-	-	14	-	-	-	8	1	3	-	-	-	12	-	-	-	1	-	-	-	-
<i>Hieraetus pennatus</i>	-	1	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Falco naumanni</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
<i>Falco tinnunculus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
<i>Falco amurensis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	-
<i>Falco subbuteo</i>	-	-	-	-	-	-	4	-	-	-	-	1	-	1	-	1	-	1	-	-	-	-	-	-	-	-
<i>Falco cherrug/peregrinus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-

Flight direction was consistently south. There can be no doubt that the cranes followed the course of the Kali Gandaki, probably via Mustang straight to the wintering areas on the Indian Subcontinent (Thiollay 1979). However, on 18 October three flocks with a total of 238 birds were recorded in the valley between Muktinath and Kagbeni, which is situated perpendicular to the Kali Gandaki. Apparently a minor part of the migration takes a different course when crossing the Tibetan Plain. The same phenomenon was noticed by Thiollay (1979) in 1978.

Compared to the totals as found by Martens (1971) and Thiollay (1978), the majority of the birds must have passed at the end of September and early October.

Black Kite *Milvus migrans*. The Black Kite is a common resident along the trek, especially below 3000m. The majority was thought to be residing in the area.

White-tailed Eagle *Haliaeetus albicilla*. A bird in its third year was noticed flying east near Birethanti on 26 October. An unidentified *Haliaeetus*-eagle was seen between Khingar and Jomoson on 19 October, flying south; it may have been a Pallas's Fish Eagle *Haliaeetus leucoryphus*.

Egyptian Vulture *Neophron percnopterus*. Migrating Egyptian Vultures were seen near Birethanti and between Lumle and Naudande on 26 and 27 October: 5 adults and two immatures. Scavenging residents were present in the hills up to 1500m.

Black Vulture *Aegypius monachus*. A single adult was flying west on 27 October between Naudande and Lumle.

Short-toed Eagle *Circaetus gallicus*. A single bird was flying west, together with a flock of Steppe Eagles, on 27 October between Naudande and Lumle. This species was not noticed during counts by Thiollay (1979) and De Roder (1989), but is apparently fairly common at Pokhara and along the Kali Gandaki (Inskipp & Inskipp 1985).

Harriers *Circus* sp.. Hen Harriers *Circus cyaneus* were sporadically recorded (5 ringtails). All four unidentified harriers were either Montagu's Harrier *C. pygargus* or Pallid Harrier *C. macrourus*.

Goshawk *Accipiter gentilis*. Both Goshawks were in juvenile plumage.

Sparrowhawk *A. nisus*. Apart from many observations of hunting Sparrowhawks, solitary birds were seen migrating between 16 October and 1 November, mostly juveniles.

Common Buzzard *Buteo buteo*. At least two individuals showed characteristics of the race *B. b. japonicus* (24 October). The majority of the

remaining birds probably belonged to *B. b. refectus*.

Long-legged Buzzard *Buteo rufinus*. A scarce migrant, observed between 15 and 26 October.

Steppe Eagle *Aquila rapax nipalensis*. Although some migration of Steppe Eagles was noticed along the Kali Gandaki, most birds were seen between Birethanti and Phedi (Figure 1). Migration was recorded throughout the observation period, but mainly at the end of October. The age was identified in 322 Steppe Eagles: 23% adult, 61% immature and 16% juvenile. Immature birds were common throughout the migration period in which Steppe Eagles were noticed; the percentage of juveniles showed some decrease at the same time, but this may have been due to small sample sizes in the first three decades of October. The birds seen along the Kali Gandaki and the Ghar Khala headed in a southern direction; those between Lumle and Phedi and in the Kathmandu Valley predominantly in a western direction. After having reached Birethanti, most Steppe Eagles followed the course of the Modi Khola to the southwest (Figure 1). The majority of unidentified eagles are thought to have been Steppe Eagles.

Imperial Eagle *Aquila heliaca*. One juvenile was heading west on 18 October at Khingar (between Kagbeni and Muktinath) and an immature bird in its 3rd or 4th year was flying west on 27 October between Lumle and Naudande.

Booted Eagle *Hieraaetus pennatus*. All birds belonged to the dark phase.

Lesser Kestrel *Falco naumanni*. Both birds were detected in a flock of Amur Falcons.

Kestrel *Falco tinnunculus*. The only observation of a migrating Kestrel was on 26 October. Many Kestrels were observed near Pokhara and in the Kathmandu Valley.

Amur Falcon *Falco amurensis*. Although only 17 birds were seen migrating on 27 October between Lumle and Naudande, this species was rather common in the surroundings of Pokhara. On 30 October, for example, 63 Amur Falcons were seen catching dragonflies over ricefields east of Pokhara. Up to five successful catches were recorded per minute. Most birds had bulging crops at the end of the afternoon. A large roost in the outskirts of Pokhara attracted at least 305 Amur Falcons on 29 October. The birds arrived between 16.00 and 17.30, first in leisurely flight and hunting insects on their way, later on in a fast and direct flight. Many adult birds (both male and female) were moulting one or several primaries and rectrices. Departure from the roost, between 5.40 and 6.20, took much less time than arrival, usually only ten minutes.

Hobby *Falco subbuteo*. Single Hobbies were migrating south along the

Kali Gandaki. Up to six birds stayed near Birethanti for a couple of days, behaving like a pair with young.

Large Falcon *Falco sp.* A Saker *Falco cherrug* or Peregrine *F. peregrinus* was seen on 27 October near Lumle, flying due west. Another Saker/Peregrine and a Saker were seen in the Kathmandu Valley on 4 November, the Saker flying southwest.

DISCUSSION

Our data support the view that the valley of the Kali Gandaki is a major migration route of soaring birds through the Tibetan Plateau. However, the existence of a considerable east-west movement of raptors (mainly Steppe Eagles) along the southern slopes of the Himalayas may indicate that many birds avoid crossing the Tibetan Plateau and pass east of the Himalayas, to follow a western course after having reached the southern slopes of the Himalayan range. This detour enables the birds to use updrafts in the lower reaches of the mountains without running the risks involved in crossing the Tibetan Plateau at its widest expanse.

As mentioned by Fleming (1983), the destination of the Steppe Eagles is still unknown. According to Ali & Ripley (1978), it is a common winter visitor in W. Pakistan, Nepal and N. India. Since exact routes are still largely unknown, it is impossible to estimate the number of Steppe Eagles involved (Fleming 1983; de Roder 1989).

SUMMARY

During 6 October to 4 November 1984, observations of migrating soaring birds were carried out along the Jomomon trek and in the Kathmandu Valley. A total of 1,332 raptors and 8,228 Demoiselle Cranes were counted, mainly along the valley of the Kali Gandaki (Demoiselle Cranes) and between Birethanti and Phedi (Figure 1). Steppe Eagles made up 87% of the total number of migrating raptors (Table 1); their flight direction was mainly west.

ACKNOWLEDGEMENTS

The help by Steen Christensen, Mogens Henriksen, Kees van Oorde and Frank de Roder is gratefully acknowledged. Carol Inskipp supplied information on Nepalese birds.

REFERENCES

- ALI, S. & S.D. RIPLEY 1978.** *Handbook of the Birds of India and Pakistan*, 1 (2nd ed.). Oxford University Press, Bombay.
- FLEMING, R.L. Jr. 1983.** An East-West *Aquila* eagle migration in the Himalayas. *J. Bombay Nat. Hist. Soc.* 80: 58-62.
- FLEMING, R.L. Sr., R.L. FLEMING Jr. & L.S. BANGDEL 1979.** *Birds of Nepal*. Avalok, Kathmandu.
- INSKIPP, C. & T. INSKIPP 1985.** *A Guide to the Birds of Nepal*. Croom Helm, London.
- MARTENS, J. 1971.** Zur Kenntnis des Vogelzuges im nepalischen Himalaya. *Vogelwarte* 26: 113-128.
- RODER, F.E. de 1989.** The migration of raptors south of Annapurna, Nepal, autumn 1985. *Forktail* 4: 9-17.
- THIOLLAY, J.M. 1979.** La migration des grues á travers l'Himalaya et la prédation par les aigles royaux. *Alauda* 47: 83-92.

Rob G. Bijlsma
Doldersummerweg 5
7983 LD Wapse
The Netherlands