
SUMMARY OF DIURNAL MIGRANTS AT KHAO DINSOR AUTUMN 2017

Prepared by the Flyway Foundation in collaboration with Bang Son Municipality and the Wildlife Research Division, Department of National Parks, Wildlife and Plant Conservation

ABSTRACT

A seasonal autumn count of raptors and other diurnal passage migrants at Khao Dinsor, Pathiu District, Chumphon, Thailand was conducted for the fourth successive year during 1 September-15 November 2017. The total of 355,825 raptors and other diurnal migrants counted was lower than in preceding years as only one of the two observation platforms was manned due to shortage of experienced manpower. Two species, Mountain Hawk Eagle *Nisaetus nipalensis* and Eastern Imperial Eagle *Aquila heliaca* were new for the site.

Acknowledgements: We are grateful to Bang Son Municipality for the use of facilities on the mountain of Khao Dinsor. The contribution of Khlong Saeng Wildlife Research Station, Surat Thani Province, Department of National Parks, Wildlife and Plant Conservation (DNP), whose staff formed the backbone of the counting team throughout the entire period, cannot be underestimated. We are very grateful to them for their contribution. They were assisted by other DNP staff from Bung Boraphet Wildlife Research Station and from the Wildlife Research Division in Bangkok. A great many volunteers also assisted. Among them we should specifically mention: Jean-Marc Thiollay, Woraphot Bunkwamdi, Warut Chaleekarn, Chanon Chirachitmichai, Yuwaree Kamolsawat, Pattaraporn Vangtal, Ingkayut Sa-ar, Andrew Pierce. Somiat Pakapinyo acted as count coordinator during 1-31 October and Wich'yanan Limparungpatthanakij during 1-15 November. Mr Chukiat Nualsri, who played a major role in establishing Khao Dinsor as a key raptor watchsite and a committee member of the Flyway Foundation, Thailand, also assisted in field data collection frequently. We thank Nikon Sales (Thailand) for the supply of equipment used for photography and measuring distance. Transport was made possible using the vehicle supported by Mazda Chumphon Co., Ltd. Donors of the Flyway Foundation, Thailand, are thanked for financial supports. Continuation of a bird ringing operation was funded by the National Science and Technology Development Agency (P-15-51051) under a joint project of King Mongkut's University of Technology Thonburi and the Faculty of Science, Mahidol University. The ringing unit consisted of Chukiat Nualsri, Desmond Allen, Bill Jones, Andrew Pierce and Philip Round.

Study area and methods

A seasonal count of diurnal passage migrants at Khao Dinsor, Bang Son Sub-district, Pathiu District, Chumphon Province, Thailand (10.63° N, 99.28° E, peak c.356 metres above sea level) was conducted during 1 September to 15 November 2017, continuing the program of counting implemented by the Flyway Foundation, Thailand, during 2014-2016. All raptors and potential passage migrants observed flying past the site were identified and counted using binoculars. Individuals subject to identification issues were photographed for further scrutiny using DSLR cameras and telephoto lenses. Total counts were recorded in hour blocks from 07h00-17h00 on a regular basis. As in previous years, weather variables including temperature, wind speed, wind direction, barometric pressure, and cloud cover were collected at the beginning of every hour. In addition, distance from the bird to observers was also opportunistically recorded using Nikon Laser rangefinder.

Due to the relatively limited number of counters compared with the previous two years, autumn 2017 count was conducted at only one station instead of two. The “Seaside Platform”, at c.220 m asl, was chosen as the fixed station for counters due to the fact that higher numbers of species and individuals could be observed there. “Eagle Cliff Platform”, further inland at c.300 m asl, manned in previous years was not manned during 2017 due to shortage of skilled manpower. Therefore some birds that passed through on a more westerly route were not detectable from Seaside Platform located on the eastern flank of the mountain.

Raptors

A total of 278,653 migrant raptors of at least 23 species were recorded ([Table 1](#)) together with 6 species resident raptors or those of uncertain status ([Table 2](#)). Additionally 77,201 other presumed diurnal migrants of another 33 species were counted ([Tables 3-4](#)).

As in previous years, the most numerous raptors recorded were Chinese Sparrowhawk *Accipiter soloensis* (144,134), Black Baza *Aviceda leuphotes* (66,139; [Plate 1](#)), Oriental Honey-buzzard *Pernis ptilorhynchus* (41,428), Japanese Sparrowhawk *Accipiter gularis* (13,798), Grey-faced Buzzard *Butastur indicus* (8,097) and Shikra *Accipiter badius* (6,870). Notable species included Mountain Hawk Eagle *Nisaetus nipalensis* ([Plate 3](#)) and Eastern Imperial Eagle *Aquila heliaca* ([Plate 4](#)), neither of which had been previously recorded at the site.

A total of 43 Japanese Sparrowhawks, 16 Chinese Sparrowhawks and a Shikra were caught and ringed during 12 September-6 October ([Table 5](#)). Biometric data was collected from all. Two adult female Chinese Sparrowhawks and a single adult female Japanese Sparrowhawk were satellite-tagged in order to track their movements.

Non-raptors

A total of 77,201 individuals of 33 species was counted (Tables 3-4). Among non-raptorial migrants, the most spectacularly numerous were Blue-tailed Bee-eater *Merops philippinus* (26,890), Barn Swallow *Hirundo rustica* (18,686), Pacific Swift *Apus pacificus* (12,238), Red-rumped Swallow *Cecropis daurica* (3,692), Ashy Minivet (2,937), Blue-throated Bee-eater *Merops viridis* (2,060) and White-throated Needletail *Hirundapus caudacutus* (1,684). The count of Silver-backed Needletails *H. cochinchinensis* (Plate 5), 302 individuals this season, more than in any previous year, is owed to better detection (using photography) during its peak passage period which is significantly later than that of White-throated. The total of 5 Common Swifts *Apus apus* detected this season further reinforce the seasonal status of this overlooked species as an annual non-breeding visitor in the mainland southeast Asia. A single Thick-billed Green Pigeon *Treron curvirostra* photographed on 12 November was presumably a local nomadic bird.

Notable records of passerines include flocks of Ashy Woodswallow *Artamus fuscus* (Plate 6), Brown-rumped Minivet *Pericrocotus cantonensis* (Plate 7) and Hair-crested Drongo *Dicrurus hottentottus* (Plate 8). All three species were previously recorded at Khao Dinsor, though are scarce or under-recorded and absent in most years. Ashy Woodswallow is essentially resident north of the Kra Isthmus, but there are sparse records as non-breeding visitors as far south to at least Phuket. The total of 35 individuals is the highest number recorded so far for southern Thailand in a single season and may represent a behavioural change in this species which may be expanding its range.

Among migrant birds that were caught and ringed a single globally threatened Brown-chested Jungle Flycatcher *Cyornis brunneatus*, on 5 October was a new record for the site (Table 5). Otherwise, the most numerous non raptorial species caught and ringed were Eastern Crowned Leaf Warbler *Phylloscopus coronatus* (63), Yellow-rumped Flycatcher *Ficedula zanthopygia*, (50), and Amur Paradise-flycatcher *Terpsiphone incei* (23).

Discussion

The total number of migratory raptors counted was lower than in all of the three preceding years. This was entirely due to reduced coverage in 2017, when counts were made at only a single station.

Most species fell in the expected range of numbers and time frame of passage in comparison with previous years. Among exceptions, species with the lowest count ever were Black-eared Kite *Milvus lineatus* and the harriers *Circus* spp. (Eastern Marsh *C. spilonotus* and Pied *C. melanoleucos*). On the other hand, the nine of the (always scarce) Amur Falcons *Falco amurensis* counted (Plate 2), was the highest ever.



Plate 1. Black Baza *Aviceda leuphotes* - the 2nd most numerous migratory raptor, although numbers counted being much lower than in the previous year



Plate 2. Amur Falcon *Falco amurensis* has its highest seasonal count ever in autumn 2017



Plate 3. An immature Mountain Hawk Eagle *Nisaetus nipalensis* - a new record for Khao Dinsor



Plate 4. A juvenile Eastern Imperial Eagle *Aquila heliaca* - a new record for south Thailand



Plate 5. Silver-backed Needletail *Hirundapus cochinchinensis*



Plate 6. Ashy Woodswallow *Artamus fuscus*



Plate 7. Brown-rumped Minivets (Swinhoe's Minivets) *Pericrocotus cantonensis*



Plate 8. Hair-crested Drongo *Dicrurus hottentottus*

Table 1. Total numbers of presumed migratory diurnal raptors species counted in autumn 2010-2017. Note that data in 2013 is lacking.

Species	2017	2016	2015	2014	2012	2011	2010
Western Osprey	63	81	76	47	51	50	57
Oriental Honey-buzzard	41,428	136,683	65,899	42,358	33,835	15,541	32,870
Jerdon's Baza	131	288	286	111	192	78	20
Black Baza	66,139	177,169	100,500	154,716	119,324	39,113	74,033
Crested Serpent Eagle	159	890	357	286	393	127	126
Short-toed Snake Eagle	-	1	8	-	3	1	<10
Greater Spotted Eagle	10	12	16	11	20	20	21
Booted Eagle	120	97	121	129	74	70	71
Steppe Eagle	-	-	2	-	-	-	-
Eastern Imperial Eagle	3	-	-	-	-	-	-
Bonelli's Eagle	-	-	-	2	1	-	-
Rufous-winged Buzzard	2	2	40	2	9	4	1
Grey-faced Buzzard	8,097	20,773	24,007	12,016	10,159	5,589	14,434
Eastern Marsh Harrier	80	197	155	119	107	171	173
Pied Harrier	13	31	53	18	39	53	65
Shikra	6,870	13,768	10,962	2,179	6,086	1,970	2,772
Chinese Sparrowhawk	141,134	410,721	170,925	61,845	83,168	93,406	83,308
Japanese Sparrowhawk	13,798	28,254	17,855	10,405	11,907	12,047	5,452
Besra	13	123	50	9	9	3	<15
Eurasian Sparrowhawk	10	14	13	7	3	-	<10
Black-eared Kite	132	266	185	154	172	173	168
<i>Circus</i> spp.	10	8	-	N/A	N/A	N/A	N/A
<i>Accipiter</i> spp.	287	1,343	5,645	2,845	N/A	N/A	N/A
<i>Buteo</i> spp.	37	54	46	24	36	47	83
Eurasian Kestrel	12	26	24	6	26	11	12
Amur Falcon	9	-	6	-	4	4	1
Eurasian Hobby	7	7	5	1	3	4	7
Peregrine Falcon	31	32	43	36	30	42	30
other unidentified	58	389	6	60	4,193	N/A	N/A
Total	278,653	791,228	397,329	287,386	269,844	168,524	213,704

Table 2. Total numbers, peak daily count, and time-frame of raptors species counted in autumn 2017. Only presumed migrants are totalised.

Species	Total counted	Peak daily count	Time frame
Western Osprey	63	7 (25 Oct)	14 Sep-15 Nov
Black-winged Kite	Resident	1	2 Sep-15 Nov
Oriental Honey-buzzard	41,428	4,995 (21 Oct)	6 Sep-15 Nov
Jerdon's Baza	131	24 (4 Nov)	21 Oct-14 Nov
Black Baza	66,139	20,860 (29 Oct)	20 Oct-15 Nov
Crested Serpent Eagle	159	26 (1 Nov)	2 Sep-15 Nov
Mountain Hawk Eagle	Resident	1	26 Oct-13 Nov
Black Eagle	Resident	1	2-6 Oct
Greater Spotted Eagle	10	2 (23 Oct, 1, 4, 6-7 Nov)	23 Oct-7 Nov
Booted Eagle	120	10 (9 Oct)	7 Oct-15 Nov
Eastern Imperial Eagle	3	1	31 Oct-7 Nov
Rufous-winged Buzzard	2	1	27 Oct-6 Nov
Grey-faced Buzzard	8,097	2,480 (28 Oct)	12 Oct-15 Nov
Eastern Marsh Harrier	80	7 (17, 19 Oct)	29 Sep-15 Nov
Pied Harrier	13	2 (17 Oct)	13 Oct-7 Nov
Shikra	6,870	710 (23 Oct)	3 Sep-15 Nov
Chinese Sparrowhawk	141,134	10,545 (1 Oct)	6 Sep-15 Nov
Japanese Sparrowhawk	13,798	1,890 (27 Sep)	2 Sep-15 Nov
Besra	13	2 (3-4 Oct)	1 Oct-10 Nov
Eurasian Sparrowhawk	10	3 (7 Nov)	19 Oct-11 Nov
Crested Goshawk	Resident	2	6 Sep-15 Nov
Brahminy Kite	Resident	8	6 Sep-15 Nov
Black-eared Kite	132	13 (13 Oct)	21 Sep-14 Nov
White-bellied Sea Eagle	Resident	4	4 Sep-15 Nov
<i>Circus</i> sp.	10	2 (17 Oct)	
<i>Accipiter</i> sp.	287	189 (28 Oct)	
<i>Buteo</i> sp.	37	7 (19 Oct)	8 Oct-10 Nov
Eurasian Kestrel	12	3 (7 Nov)	14 Oct-15 Nov
Amur Falcon	9	2 (5 Nov)	30 Ctc-25 Nov
Eurasian Hobby	7	1	15 Oct-15 Nov
Peregrine Falcon	31	3 (8 Oct)	30 Sep-15 Nov
other unidentified	58	376 (17 Oct)	
Total	278,653	22,210 (29 Oct)	2 Sep-15 Nov

Table 3. Total numbers of important diurnal migratory non-raptor species counted in autumn 2011-2017. Note that data in 2010 and 2013 are lacking.

Species	2017	2016	2015	2014	2012	2011
Painted Stork	-	-	1	-	-	-
Asian Openbill	3,133	15,362	21,713	2,612	1,321	49
Christmas Island Frigatebird	-	-	-	1	-	-
Little Cormorant	18	7	4	N/A	N/A	N/A
Great Cormorant	-	3	-	N/A	N/A	N/A
Oriental Darter	5	4	16	5	N/A	N/A
Little Egret	1,121	-	24	26	854	1,027
Grey Heron	-	1	15	-	-	-
Purple Heron	-	1	5	-	-	-
Great Egret	56	-	1	-	7	4
Intermediate Egret	9	-	11	-	-	-
Eastern Cattle Egret	736	2	-	-	-	-
Chinese Pond Heron	5	19	2	-	-	-
Black-headed Ibis	-	-	10	-	18	-
Pacific Golden Plover	-	37	-	N/A	N/A	N/A
Oriental Pratincole	275	220	720	27	143	153
Whiskered Tern	-	-	1	-	-	-
Pale-capped Pigeon	-	7	4	5	3	N/A
White-throated Needletail	1,684	2,890	1,663	203	724	745
Silver-backed Needletail	302	56	156	-	17	53
Brown-backed Needletail	328	380	553	25	37	121
unidentified needletail	965	903	2,153	78	N/A	N/A
Common Swift	5	19	3	1	-	-
Pacific Swift	12,238	25,118	20,350	11,858	20,666	22,816
Wreathed Hornbill	-	6	-	N/A	N/A	N/A
Plain-pouched Hornbill	-	-	-	1	-	-
Chestnut-headed Bee-eater	192	358	355	103	144	68
Blue-throated Bee-eater	2,060	3,237	1,676	788	1,863	2,265
Blue-tailed Bee-eater	26,890	57,074	46,887	14,944	26,888	24,869
Oriental Dollarbird	49	308	237	8	53	33
Rosy Minivet	-	2	-	-	-	-
Brown-rumped Minivet	35	3	-	-	-	-
Ashy Minivet	2,937	4,752	8,819	2,428	3,303	3,146
Black-winged Cuckooshrike	3	10	2	-	-	-
Black-naped Oriole	268	330	256	101	141	160
Ashy Woodswallow	35	-	7	-	-	-
Ashy Drongo	113	210	138	8	16	16
Black Drongo	628	2,119	1,812	253	2,012	1,514
Hair-crested Drongo	7	1	4	-	2	-
Common Sand Martin	-	63	55	3	10	-
Barn Swallow	18,686	83,339	88,733	15,771	68,744	84,005
Red-rumped Swallow	3,692	27,175	4,802	2,119	2,849	2,834
Asian House Martin	691	2,044	1,839	107	272	207
Chestnut-flanked White-eye	-	1	35	-	-	-
Purple-backed Starling	-	30	-	-	-	-
Blue Rock-thrush	1	1	4	-	2	-
Forest Wagtail	5	80	135	3	4	N/A
Eastern Yellow Wagtail	-	40	76	12	N/A	N/A
Grey Wagtail	-	60	36	-	52	N/A
Richard's Pipit	-	13	1	-	1	-
Blyth's Pipit	-	1	-	-	-	-
Olive-backed Pipit	-	1	2	-	-	-
Yellow-breasted Bunting	-	6	-	-	-	-

Table 4. Total numbers of diurnal migratory non-raptor species counted in autumn 2017.

Species	Total counted	Peak daily count	Time frame
Asian Openbill	3,133	577 (10 Nov)	5 Sep-15 Nov
Little Cormorant	18	5 (7, 10 Nov)	12 Sep-12 Nov
Oriental Darter	5	3 (13 Nov)	23 Oct-13 Nov
Little Egret	1,121	403 (30 Sep)	20 Sep-7 Oct
Great Egret	56	38 (22 Oct)	7 Oct-13 Nov
Intermediate Egret	9	3 (29 Oct)	29 Oct-14 Nov
Eastern Cattle Egret	736	150 (11 Sep)	10 Sep-29 Oct
Chinese Pond Heron	5	4 (7 Oct)	2-7 Oct
Oriental Pratincole	275	132 (25 Oct)	12 Oct-11 Nov
White-throated Needletail	1,684	383 (7 Nov)	24 Sep-15 Nov
Silver-backed Needletail	302	157 (13 Nov)	30 Oct-15 Nov
Brown-backed Needletail	328	132 (13 Nov)	29 Sep-15 Nov
unidentified needletail	965	457 (13 Nov)	
Common Swift	5	1	1-25 Oct
Pacific Swift	12,238	1,717 (3 Oct)	4 Sep-15 Nov
Chestnut-headed Bee-eater	192	48 (15 Nov)	1 Oct-15 Nov
Blue-throated Bee-eater	2,060	217 (29 Sep)	3 Sep-11 Nov
Blue-tailed Bee-eater	26,890	1,489 (14 Oct)	2 Sep-15 Nov
unidentified bee-eater	32	27 (7 Sep)	
Oriental Dollarbird	49	13 (20 Oct)	11 Oct-14 Nov
Brown-rumped Minivet	35	32 (13 Nov)	24 Oct-13 Nov
Ashy Minivet	2,937	306 (11 Nov)	13 Oct-15 Nov
Black-winged Cuckooshrike	3	1	12 Oct-7 Nov
Black-naped Oriole	268	24 (21 Oct)	3 Oct-14 Nov
Ashy Woodswallow	35	8 (9 Nov)	24 Oct-10 Nov
Ashy Drongo	113	16 (20 Oct)	1 Oct-15 Nov
Black Drongo	628	83 (27 Oct)	2 Oct-15 Nov
Hair-crested Drongo	7	6 (15 Nov)	12-15 Nov
Barn Swallow	18,686	1,308 (10 Oct)	4 Sep-15 Nov
Red-rumped Swallow	3,692	870 (9 Oct)	24 Sep-15 Nov
Asian House Martin	691	173 (11 Nov)	19 Sep-15 Nov
Blue Rock-thrush	1	1	2 Oct
Forest Wagtail	5	5	14 Oct

Table 5. Totals of birds handled at Khao Dinsor, 12 Sep-8 Oct 2017.

Species	New birds	Retraps
Eastern Crowned Leaf Warbler	63	
Yellow-rumped Flycatcher	48	
Japanese Sparrowhawk	43	
Amur Paradise-flycatcher	23	
Chinese Sparrowhawk	16	
Arctic Leaf Warbler	14	
Stripe-throated Bulbul	10	3
prob. Sakhalin Leaf Warbler	11	
Brown Shrike	9	
Blyth's Paradise-flycatcher	5	1
Siberian Blue Robin	5	
Barn Swallow	4	
Crow-billed Drongo	3	
Sakhalin Leaf Warbler ¹	3	
Asian Brown Flycatcher	3	
Blue-throated Bee-eater	2	
Tiger Shrike	2	
Alström's Warbler	2	
Orange-bellied Flowerpecker	2	
Shikra	1	
Blue-tailed Bee-eater	1	
Brown-chested Jungle Flycatcher	1	
Crimson Sunbird	1	
Forest Wagtail	1	
Total	273	4

¹ substantiated by low-pitched call on release

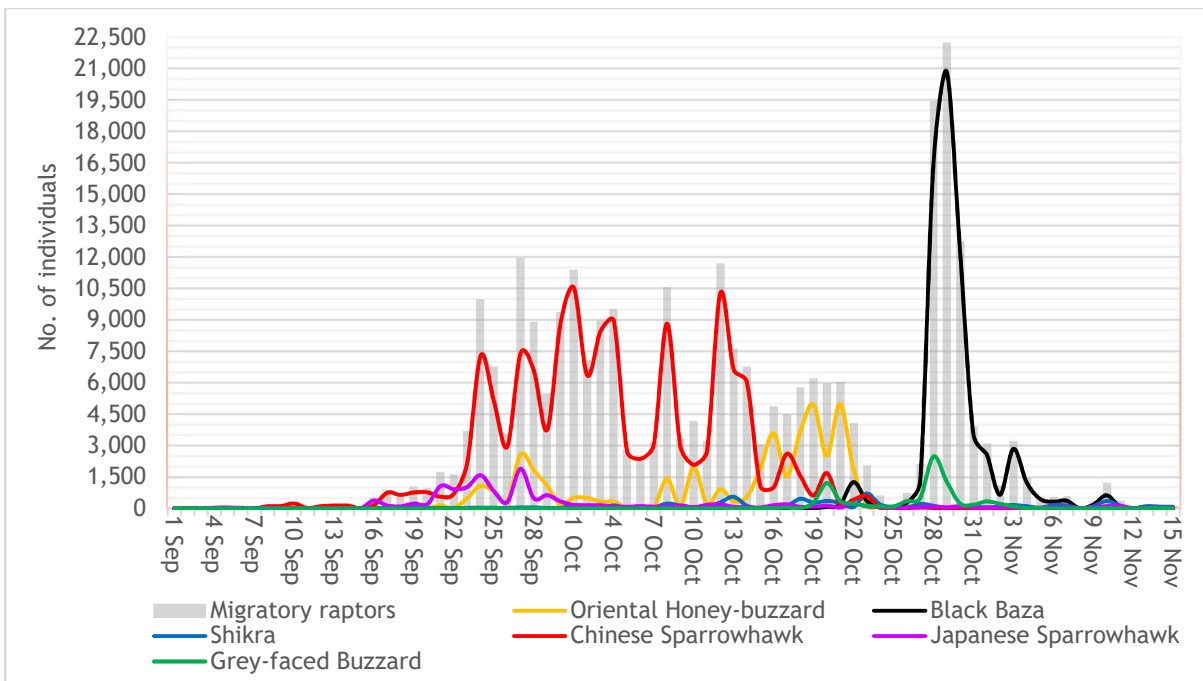


Figure 1. Numbers of raptors with highest counts throughout the season. Bar chart represents daily total numbers of migratory raptors for comparison.

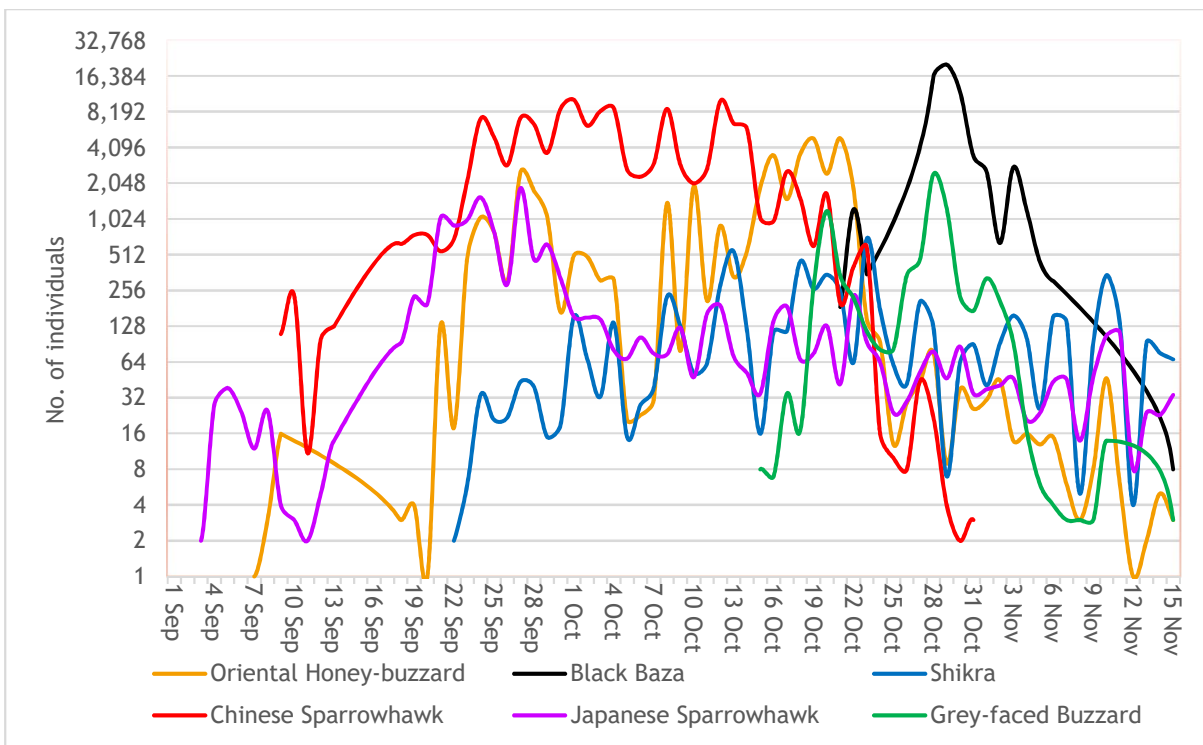


Figure 2. Numbers of raptors with highest counts throughout the season. Logarithmic scale is applied for the ease in comparison of species trends.