

# Status and distribution of Indian Spotted Eagle in Gujarat

Devvratsinh Mori: Opp. Darbargadh, Wadhwan City 363030. devvratsinhmori@gmail.com



Devvratsinh Mori

*et al.* 2018), while others like Grimmett *et al.* (2011), the Oriental Bird Club (OBC), the Dutch Committee (CDNA and CSNA) still follow the old nomenclature of *Aquila hastata*. Molecular studies on the genus *Aquila* were inconclusive and a conservative approach suggested maintaining a large genus *Aquila*, but excluding *A. clanga* and *A. pomarina* (Helbig *et al.* 2005). I follow the taxonomy given in Grimmett *et al.* (2011) and treat the Indian Spotted Eagle as *Aquila hastata*, fully aware that other authorities treat it as *Clanga hastata*.



Prasad Ganpule

## Introduction

The Indian Spotted Eagle (*Aquila hastata*) is resident in the Indian Subcontinent (Grimmett *et al.* 2011). It is treated as a 'Vulnerable' species and thought to have a small and declining population, threatened by conversion and disturbance of forested habitats within its range (BirdLife International 2018). It is an uncommon to rare resident in India, patchily distributed from the Gangetic Plains, south to Gujarat and Maharashtra, Central India, eastern and Northeast India (Naoroji 2006).

Though widespread, it is poorly studied and not much is known about its status in Gujarat. I present here the status and distribution of the Indian Spotted Eagle in Gujarat, based on sightings (verified photographic records) collected from 2005 till now (May 2018).

## Taxonomy

The Indian Spotted Eagle was earlier treated as a subspecies of the Lesser Spotted Eagle (*Aquila pomarina*) (Naoroji 2006). However, it was split and is now considered as a separate species, *Aquila hastata*, as it is morphologically and structurally distinct (Parry *et al.* 2002, Rasmussen & Anderton 2012). Further DNA studies confirmed this and recommended that the Indian Spotted Eagle be treated as a distinct species (Väli 2006). Some authorities treat it as *Clanga hastata* (Rasmussen & Anderton 2012, BirdLife International 2018, del Hoyo

## Identification

The identification of the Indian Spotted Eagle is quite challenging. It can be confused with Greater Spotted Eagle (*Aquila clanga*), Tawny Eagle (*Aquila rapax*), Steppe Eagle (*Aquila nipalensis*) and also dark morph Booted Eagle (*Hieraaetus pennatus*). In general, Indian Spotted Eagle is rather slim and small, with a small bill and thick fleshy-yellow or orange gape, which is visible from a distance. In juvenile plumage, it is usually dull brown, with white spots on wing coverts, and is often heavily streaked (or spotted) on the underparts. Adults are uniformly dark chocolate brown, duller and paler than Greater Spotted Eagles and lack the spiky nape seen in that species. In flight, Indian Spotted Eagle usually shows six well developed fingered primaries (seven in Greater Spotted Eagle, Tawny Eagle and Steppe Eagle, but beware of broken primaries in these species!). However, this is not diagnostic. In juvenile plumage, the barring on the secondaries is diagnostic; Indian Spotted Eagle has finely barred secondaries while in Greater Spotted Eagle, faint barring is seen only up to the middle of secondaries. In Tawny Eagle, these are broad and vaguely barred, while Steppe Eagle has distinct and broader barring on the remiges. Booted Eagle shows white shoulder patches (lacking in Indian Spotted Eagle), and different underwing pattern. Sometimes, confusion with Black Kite (*Milvus migrans*) is possible, but Black Kite is structurally different, has a different flight action and underwing pattern.

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But, plumage in Indian Spotted Eagle is highly variable and a host of features are required to be studied before the identification can be confirmed. Rasmussen & Anderton (2012) state that there is long term confusion in the identification of the Indian Spotted Eagle and beyond specimen records, all other records require re-evaluation. BirdLife International (2018) states that, 'ascertaining its true status and distribution is hampered by identification problems and an unknown proportion of records of this species may actually relate to Greater Spotted Eagle; photographic evidence is therefore usually required to accept sightings'. This is borne out by the fact that there are many photos on the internet, posted on birding websites and labelled as this species, which are clear misidentifications. In view of this, it is necessary to be extra careful regarding the records of this species from Gujarat. It is also very important to obtain images of the birds in flight as the pattern on the underwings needs to be seen for correct identification. Some individuals remain extremely difficult to identify; see Ganpule (2016b) for an unidentified *Aquila* eagle seen in the Little Rann of Kachchh, initially identified as an Indian Spotted Eagle but then, after studying the photographs, the identification was inconclusive and it remained a mystery as the underwing pattern was not noted or photographed. Thus, if possible, it is important to get images of birds in flight.

### Status in Gujarat

Since the Indian Spotted Eagle was split from the Lesser Spotted Eagle fairly recently, the historical records of this species from Gujarat are given as Lesser Spotted Eagle (*A. p. hastata*). Ali (1945) does not mention it for Kachchh. The same author, Dr. Salim Ali, did not come across this species during his travels in Gujarat (Ali 1954). Dharmakumarsinhji (1955) gave it as 'rare in Saurashtra', noting that he did not come across eggs of this eagle in the region, indicating it did not breed here. Naoroji (2006) mentions a record of the Indian Spotted Eagle from Banni, Kachchh, by Samant *et al.* (1995) and also gives a breeding record from Bhavnagar area. This breeding record given in Naoroji (2006) is surprising and I could not trace any details of this record. Khacher (1996) stated that this species has become scarce and all sightings needed to be recorded. In fact, Naoroji (2006) suggests this species as one of the 'raptors to watch' in India.

The recent reference texts differ regarding the occurrence and status of the Indian Spotted Eagle in Gujarat. Kazmierczak (2000) shows it as a winter migrant to Gir National Park area only (and does not give any other regional records for Gujarat) while Grimmett *et al.* (2011) give it as a resident

in Gir area, and the rest of the state is shown as its former range with no recent records, but may survive. Rasmussen & Anderton (2012) do not show any record of the species at all for the state, which is incorrect, but it is possible that since the authors did not come across any specimen records from Gujarat, they did not consider it. But, this seems rather extreme when a few published records do exist from Gujarat. A recent update on the species was provided by Ganpule (2016a), who gave it as 'uncommon to rare winter visitor and possible resident. Probably breeding in south Gujarat area with recent records from Greater and Little Rann of Kachchh, Velavadar National Park, Bhavnagar, Marine National Park (Jamnagar) and Porbandar, and rare elsewhere with isolated records from all parts of the state'. Thus, apart from the general details given by Ganpule (2016a), there is very little data on the Indian Spotted Eagle in Gujarat.

### Sightings

On 13 December 2010 near Wadhwan, Surendranagar, at around 11:30 hrs, I saw an eagle (*Aquila* sp.) in flight being mobbed by a Black Drongo (*Dicrurus macrocercus*), but the eagle was not clearly identified in the field because it was against the light. I took a few photos from long distance and identified it as an Indian Spotted Eagle. The identification was confirmed by experts. It was my first encounter with this species. I then carried out extensive surveys in Gujarat from 2010 to 2018 to look for it. I saw this species in various locations in Gujarat. Details of my sightings and those of other observers, from different places in Gujarat, are given in the table. Also, I have collected a record of an injured Indian Spotted Eagle which was rescued near Ahmedabad.

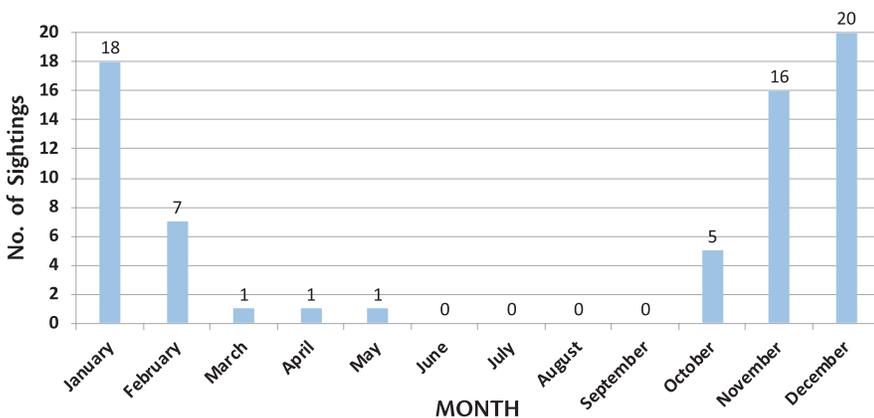
I have thoroughly searched for records of Indian Spotted Eagle from Gujarat. It is possible that I may have missed some personal records of birdwatchers who have not shared their images on birding forums, but I have tried to collect as many sightings as possible from different locations in Gujarat. Also, I have carefully browsed through all the photographs available on websites like INW ([indianaturewatch.net](http://indianaturewatch.net)), OBI ([orientalbirdimages.org](http://orientalbirdimages.org)), BOG ([birdsofgujarat.co.in](http://birdsofgujarat.co.in)), IBC ([hbw.com/internetbirdcollection](http://hbw.com/internetbirdcollection)), blogs ([birdinggujarat.wordpress.com](http://birdinggujarat.wordpress.com)), personal communication with bird watchers and various birding groups on social media like FB (Facebook.com), and other birding forums. I have collected many sightings from different location of Gujarat but a few individuals, which were posted as this species but are wrongly identified, have not been considered. The collected sightings of Indian Spotted Eagle from various locations from all over the state are given in map.

Photographic records of the Indian Spotted Eagle in Gujarat from 2005 to 2018

Sr. No.	Location	Date	Observer	Source	Remarks
1	Krushnakunj Lake, Bhavnagar	May 2005	Vishubha Raol	<i>pers. comm.</i>	
2	Ahmedabad outskirts	December 2005	Rajesh Shah	<i>pers. comm.</i>	
3	Little Rann of Kachchh	29 October 2008	Nirav Bhatt	<i>pers. comm.</i>	
4	Little Rann of Kachchh	December 2008	Saurabh Desai, Dhaivat Hathi	Desai (2009)	juvenile
5	Banni, Kachchh	9 November 2009	Vaibhav Mishra	OBI	
6	Naliya, Kachchh	November 2009	Amish Patel	INW	
7	Limbdi-Gurgadh Road, Charakla, Dwarka	20 December 2009	Maulik Varu, Kapilsinh Zala	<i>pers. comm.</i>	
8	Kanewal, Anand	1 January 2010	Bimal Patel	<i>pers. comm.</i>	
9	Banni, Kachchh	3 November 2010	Rohan Kamath	OBI	
10	Banni, Kachchh	21 November 2010	Girish Prahalad	OBI	
11	Wadhwan, Surendranagar	13 December 2010	Devvratsinh Mori	Author's sighting	in flight
12	Narda Lake, Anand	26 January 2011	Yagnesh Bhatt	<i>pers. comm.</i>	
13	Bhavnagar	11 December 2011	Maulik Varu	Varu (2014)	
14	Velavadar National Park	30 December 2011	Devvratsinh Mori	Author's sighting	
15	Velavadar National Park	6 January 2012	Kuldeep Kharade	OBI	
16	Velavadar National Park	28 January 2012	Stanislav Harvančík	IBC	juvenile in flight
17	Ahmedabad outskirts	3 February 2012	Sherwin Everett	<i>pers. comm.</i>	rescued individual
18	Velavadar National Park	28 October 2012	Shantilal Varu	BOG Website	
19	Sanand, near Ahmedabad	28 November 2012	Darshan Parikh	<i>pers. comm.</i>	
20	Untiyadra, Bharuch	13 Nov. 2013 to 17 Nov. 2013	Jugal Patel	<i>pers. comm.</i>	10 to 12 individuals seen for one week
21	Velavadar National Park	January 2014	Sunil Moteria	<i>pers. comm.</i>	
22	Surat	January 2014	Vijayendra Desai	FB	
23	Pariej, Anand	15 January 2014	Yagnesh Bhatt	<i>pers. comm.</i>	
24	Anklava, Bharuch	20 January 2014	Jugal Patel	<i>pers. comm.</i>	
25	Little Rann of Kachchh	26 January 2014	Devvratsinh Mori	Author's sighting	
26	Dholera	30 January 2014	Rajnikant Trivedi	<i>pers. comm.</i>	
27	Velavadar National Park	12 February 2014	Devvratsinh Mori	Author's sighting	
28	Surat	December 2014	Ankur Patel	FB	
29	Khijadiya Bird Sanctuary, Jamnagar	15 December 2014	Manish Acharya	<i>pers. comm.</i>	
30	Near Sachana, Ahmedabad	25 January 2015	Vipul Trivedi	BOG website	
31	Positra, near Dwarka	1 November 2015	Maulik Varu	Varu (2016)	2 juveniles in flight near the coast
32	Near Viramgam	14 November 2015	Avinash Bhagat	OBI	
33	Thol Bird Sanctuary, near Ahmedabad	15 November 2015	Anshuman Sarkar	eBird/OBI	
34	Ahmedabad outskirts	18 November 2015	Vipul Trivedi	eBird	
35	Ahmedabad	November 2015	Avinash Bhagat	FB	in flight
36	Porbandar	6 December 2015	Gaurang Bagda	eBird	Juvenile perched
37	Gosabara, near Porbandar	13 December 2015	Gaurang Bagda	eBird	
38	Little Rann of Kachchh	25 December 2015	Amish Patel	<i>pers. comm.</i>	
39	Hansot, Kantiyajal Road, Ankleshwar	December 2015	Jugal Patel	<i>pers. comm.</i>	

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Sr. No.	Location	Date	Observer	Source	Remarks
40	Surat	January 2016	Vijayendra Desai	FB	juvenile in flight
41	Vastana Road, Limbasi, Kheda	2 February 2016	Vishal Mistry	<i>pers. comm.</i>	
42	Gosabara, near Porbandar	7 February 2016	Prasad Ganpule	<i>pers. comm.</i>	
43	Kakrach, Amreli	4 October 2016	Ankit Shukla	<i>pers. comm.</i>	
44	Gosabara, near Porbandar	29 October 2016	Punit Karia	<i>pers. comm.</i>	
45	Nal Sarovar Bird Sanctuary	7 November 2016	Viral Patel, Pankaj Maheria	OBI	
46	Little Rann of Kachchh	14 November 2016	Viral Patel, Pankaj Maheria	OBI	
47	Dharasana, Valsad	6 December 2016	Pragnesh Patel	BOG website	
48	Pariej, Anand District	25 December 2016	Bhavesh Mengar	BOG website	
49	Vastana Road, Limbasi, Kheda	7 January 2017	Bhavesh Mengar	<i>pers. comm.</i>	
50	Vastana Road, Limbasi, Kheda	11 February 2017	Bhavesh Mengar	<i>pers. comm.</i>	
51	Vastana Road, Limbasi, Kheda	18 February 2017	Bhavesh Mengar	<i>pers. comm.</i>	
52	Udadvada, Valsad	4 October 2017	Anand Patel	BOG website	
53	Udadvada, Valsad	5 November 2017	Viren Desai	BOG website	
54	Pariej, Anand	November 2017	Bhavesh Kaushal	INW	
55	Velavadar National Park	November 2017	Raxit Gore	FB	
56	Wadhvana lake, Vadodara	10 December 2017	Mahamad Jat	<i>pers. comm.</i>	
57	Wadhvana lake, Vadodara	11 December 2017	Devvratsinh Mori	Author's sighting	
58	Velavadar National Park	15 December 2017	Rohit Pansare	eBird	
59	Vastana Road, Limbasi, Kheda	24 December 2017	Bhavesh Mengar	<i>pers. comm.</i>	
60	Vastana Road, Limbasi, Kheda	29 December 2017	Bhavesh Mengar	<i>pers. comm.</i>	
61	Vastana Road, Limbasi, Kheda	30 December 2017	Vishal Mistry	<i>pers. comm.</i>	pale plumaged juvenile
62	Sultanpur Wetland, Navsari	8 January 2018	Saswat Misra	BOG website	
63	Vastana Road, Limbasi, Kheda	12 January 2018	Bhavesh Mengar	<i>pers. comm.</i>	
64	Pariej, Anand	14 January 2018	Dhaivat Hathi	<i>pers. comm.</i>	
65	Velavadar National Park	21 January 2018	Gaurang Bagda	eBird	
66	Mahuva, Bhavnagar	27 January 2018	Batuk Bhil, Ashok Mashru	<i>pers. comm.</i>	juvenile perched
67	Pariej, Anand	21 February 2018	Devvratsinh Mori	Author's sighting	
68	Viramgam	11 March 2018	Devvratsinh Mori	Author's sighting	
69	Nal Sarovar Bird Sanctuary	4 April 2018	Devvratsinh Mori	Author's sighting	



It is important here to note that all the above sightings have been verified and the identification confirmed. Only those sightings where the identification is beyond any doubt have been given here. There are many records of Indian Spotted Eagle given on the data sharing website 'eBird', but I have taken only those records where photographs have been posted. In some cases, the photographs are not very clear or there is only one photo; I have not taken records if there is any doubt regarding identification. While some of the sightings without photos may be correct, I have erred on the side of caution since this is a 'difficult to identify' species and also to present a correct picture regarding its occurrence here. Some of the sightings listed here are probably of the same bird(s) seen on different dates. I have not attempted to separately identify each individual in the table and only sightings have been reported here. The sighting of a group of 10-12 individuals for one week in Bharuch District by Jugal Patel is very interesting. It suggests that the species is present in good numbers there. These individuals were seen for five consecutive days. In the graph, these sightings are combined and taken as one sighting. Another interesting sighting is that of two juveniles near Poshitra, Dwarka, near the coast in extreme western part of Saurashtra. These juveniles were photographed in flight. This is also taken as a single sighting for the graph.

### Discussion

Apart from the status and distribution of the Indian Spotted Eagle given recently by Ganpule (2016a), this is the first proper compilation of records of the species from Gujarat. With the availability of modern photographic equipment in the hands of good photographers, and an increasing number of birders, photographic records of this species from various parts of Gujarat have been reported. Thus, a true impression of its status and distribution here in Gujarat can be obtained based on these recent records as these are verified photographic records.

As can be seen from the above records, the Indian Spotted Eagle has been noted from almost all parts of Gujarat and is widely distributed. It is interesting to note that majority of the records are from October to March, mainly in the winter months. As can be seen from the graph, 88% (61 out of 69) of the sightings are from the winter months of November – February. There are no records in the monsoon season from Gujarat i.e. from June - September. Also, there is just one record in the month of May. In a recent study in Belgaum, Karnataka, nesting was observed from March to July (Sant *et al.* 2013). The Indian Spotted Eagle is generally thought to breed from February/March till August (Naoroji 2006). While there are no direct observations of mating, eggs or chicks from Gujarat,

it is possible that it could be breeding in south Gujarat, as it has been observed there in good numbers. Surveys should be conducted to see if the Indian Spotted Eagle breeds in south Gujarat. Apart from the breeding record given in Naoroji (2006), there is no other breeding instance of this species recently in the state. This record given in Naoroji (2006) seems to be from Velavadar National Park. However, at present, this area is regularly visited till 15 June when the park closes for the monsoon. But, there have been no reports of its breeding in this area. The lack of any records in the monsoon months indicates that it probably does not breed in Saurashtra and Kachchh. For south Gujarat, if sightings in the monsoon months are reported in the future, then it would indicate the probability of breeding.

It can be inferred from the above records that the Indian Spotted Eagle is mainly a winter migrant to Gujarat and is uncommon or rare. Velavadar National Park and Gosabara (also known as Mokarsagar) near Porbandar, are two places in Saurashtra where it is seen regularly. In south Gujarat, it has been noted from many locations. There are many sightings from central Gujarat too. The Little Rann of Kachchh is another area from where it has been frequently reported. It can be observed that this species is seen in diverse habitats in the state. Sightings have been reported from arid areas, wetlands, forests and even coastal areas. Sant *et al.* (2013) observed breeding in an area with cultivation (mainly paddy) and large trees in Belgaum, Karnataka. It seems that in the winter, there are no specific habitat preferences for the species. But, this requires further study.

Most of the sightings here are of juvenile or immature birds. It is possible that juveniles / immature birds wander before they attain adulthood and breed. But, again, this requires further study. The Indian Spotted Eagle is thought to be sedentary in India. However, it seems to be mainly a winter migrant to Saurashtra and Kachchh. Its status in south Gujarat needs more study. But, at present, it can be said that it is only a winter visitor to this region too. There are no reports of the Indian Spotted Eagle from north Gujarat. It is quite possible that it may be present and is overlooked. Similarly, it is surprising that it has not been noted in Junagadh and Gir-Somnath Districts. Bird watchers from these areas are requested to look out for this species. Assuming that the individuals seen here are migrating from other parts of the country, it is probably a short distance migrant in the winter, with juveniles and adults probably dispersing after the juveniles fledge. However, in Belgaum, Karnataka, adults nesting there remain in the area throughout the year and juveniles also remain there after fledging; in winter, the population increases and it seems that some individuals,

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presumably from other nearby regions, come to this area for the winter months (Niranjan Sant, *pers. comm.*). Thus, it is possible that some birds do disperse after nesting, probably migrating short distances to suitable habitats in the winter. But, the individuals in Belgaum are sedentary. It will be interesting to find out the origins of the birds seen here in the state. This can be done by satellite tagging a few individuals seen in Gujarat and also ringing/tagging juveniles in nests in different parts of the country. However, the species is sensitive; small changes like cutting of branches on lower parts of the nesting tree resulted in the abandonment of the nest in incubation stage (Niranjan Sant, *pers. comm.*). So tagging, if done, would be possible or should be done only on almost fledged juveniles so that there is no disturbance to the nesting adults.

The Indian Spotted Eagle is a very less studied raptor in Gujarat. It is recommended that further studies be carried out on its ecology, habitat preferences, food etc. here in the state. Attention is sought to be drawn to this 'Vulnerable' species here in Gujarat with this note and it is suggested that sightings of the Indian Spotted Eagle in the future be properly documented and verified by raptor experts to remove any doubts regarding identification. It is important to find out if the species breeds here. Towards this, intensive surveys should be carried out in suitable areas of south Gujarat. Thus, the Indian Spotted Eagle remains an enigmatic species, needing much more work in the future in Gujarat.

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