

E-ISSN: 2708-0021

P-ISSN: 2708-0013

www.actajournal.com

AEZ 2022; 3(2): 105-111

Received: 07-04-2022

Accepted: 10-05-2022

Ravi PatelSardar Patel Zoological Park,
Kevadiya colony, Gujarat,
India**Gaurang Bagada**Ujash', Morarinagar,
Laxminagar, Junagadh,
Gujarat, India

Status and distribution of Forest Wagtail *Dendronathus indicus* (Gmelin, 1789) in Gujarat, India

Ravi Patel and Gaurang BagadaDOI: <https://doi.org/10.33545/27080013.2022.v3.i2b.81>**Abstract**

The Forest Wagtail (*Dendronathus indicus*) is a winter migratory bird species in India. We conducted surveys over four winter seasons, from November to March, from 2017 to 2021, for a 20-month survey. The surveys were done on a weekly basis, and covered three selected study sites to know about the presence of Forest Wagtail and count the number of individuals seen. The area we study is Bhavnath Taleti (21° 31' 57" N, 70° 30' 08" E), located near Junagadh city, in the Saurashtra region of Gujarat state. We studied the distribution of Forest Wagtail in Gujarat by studying published records and collecting records from other bird watchers; the distribution covered 75 years (1946 to 2021). After twenty-month study, we found the maximum number of individuals in February and March. In Gujarat state, the distribution of Forest Wagtail can be divided into five regions; the major sightings are in Saurashtra, followed by South Gujarat. The number of sightings in Kutch, North Gujarat and Central Gujarat are less.

Keywords: Forest wagtail, winter migratory, observation, bhavnath taleti, rare, distribution

Introduction

The Forest Wagtail *Dendronathus indicus* (Gmelin, 1789) belongs to the Family *Motacillidae* and Order *Passeriformes*. This family has five genera, out of which three are reported from India: *Anthus*, *Motacilla* and *Dendronanthus*. The wagtails are terrestrial, small, slender, long legged birds with thin pointed bills; predominantly insectivores and they walk through a patch on the ground, picking insects on the ground (Grimmett et. al., 2011)^[9]. The adult is olive brown above, with a pale supercilium and eye ring. The wing is blackish-brown with large yellow spots or patch forming prominent band. A blackish band below the throat is present and a second band, broken on the breast, is diagnostic along with the double wing bands. In adult Forest Wagtails, sexes are similar while juvenile plumage is slightly different than adult (Ali 2012)^[2]. *D. indicus* typically inhabits forests and woodlands, and is known to avoid large open areas. It has a habit of swaying its tail and body sideways in a unique fashion. It walks effortlessly along branches in a manner reminiscent of Tree Pipit *Anthus trivialis* and Olive-backed Pipits *Anthus hodgsoni* (Alström & Mild 2003)^[15]. *D. indicus* breed mainly in China, Korea and adjacent part of south-eastern Russia and it winters in south-east Asia, Indonesia and India.



Fig 1: The adult Forest Wagtail mid-winter at Bhavnath Taleti at 2019. (Photo by Ravi Patel)

Corresponding Author:**Ravi Patel**Sardar Patel Zoological Park,
Kevadiya colony, Gujarat,
India

In India, the *D. indicus* is a widespread winter migrant. It winters mainly in the Western Ghats, and there is recorded from almost every parts of the country (Grimmett *et al.* 2011)^[9]. A recent study by Kannan (2018)^[13], over 39 years and comprising of 243 sightings from the Chennai area found that, the species was seen in all the other months of the year except for the months of June, July and August; this suggested that this species is a winter migrant as well as a passage migrant, arriving in September and returning back in May.

Historical records from Gujarat

Gujarat state is located in western India. The state has varied habitats, with the moist and dry deciduous forests of South Gujarat to the deserts of Kutch. There is great diversity in the bird life found here. Gujarat has always been lucky to have ornithologists and dedicated bird watchers. Major surveys and specimen collections were done here before independence country (Ganpule 2016)^[6]. The current updated avian checklist of Gujarat reported 609 species in the state (Ganpule 2020)^[5].

The *D. indicus* was first sighted and a specimen was collected from the Dang forest, south Gujarat, by Salim Ali (Specimen no. GS1270) (Ali 1952)^[1]. A male was collected on 14th April 1946 and after two years, a female on 22th March in 1948. According to Salim Ali, the Forest Wagtail was a winter migrant, rare and could probably occur in the Gir forest of Junagadh, Saurashtra region (Ali 1952)^[1]. After 10 years, in December 1962, the *D. indicus* was reported from Gir forest (Dharmakumarsinhji 1963)^[4]. It was then reported from Kutch district in 1967 and from the Vijayvilas Palace in Mandvi Kutch in 1969 (Himmatsinhji 1967, 1970)^[11, 12]. This species was then seen in December

1982 at Namgir forest, near Rajpipla, Narmada district (Monga & Naoroji 1984)^[16]. In November 1987, a *D. indicus* was captured in a mist net and was ringed (Khachar 1990)^[14]. Thus there have been records of the species from different areas of Gujarat and it was considered to be a rare winter migrant to the state.

Study Area

In Junagadh, we observed a *D. indicus* for the first time on 29th December 2016 at Bhavnath Taleti, Junagadh district, Gujarat state (Figure 1), which then prompted us to search for previous records of the species. Ganpule (2016)^[6] stated that the Forest Wagtail was an uncommon to rare winter visitor to the state, and seen in south Gujarat, rare in Saurashtra and vagrant in Kutch. We started our study and collected records from other bird watchers during this time. Here, we have attempted to document the records of Forest Wagtail from Gujarat and give an idea about the status and distribution of the species in the state. We have covered records from 1946 till April 2021. We have documented all our sightings from Bhavnath Taleti area and provide details about the number of birds recorded by us in this area.

The Bhavnath Taleti (21° 31' 57" N, 70° 30' 08" E) is situated around seven kilometers from Junagadh city and lies in the Saurashtra region, Gujarat (Figure 2). The total area of the Bhavnath Taleti is 8.2 km² (Fig 2). In this area, we selected three observation sites. Those entire sites are public places, and have well wooded habitat and check dams. In this study area, the dominant tree species is *Tectona grandis* and *Pithecellobium dulce*. The humidity is comparatively high at these sites. During winter, the temperature falls below 14°C and the coldest months are December and January.

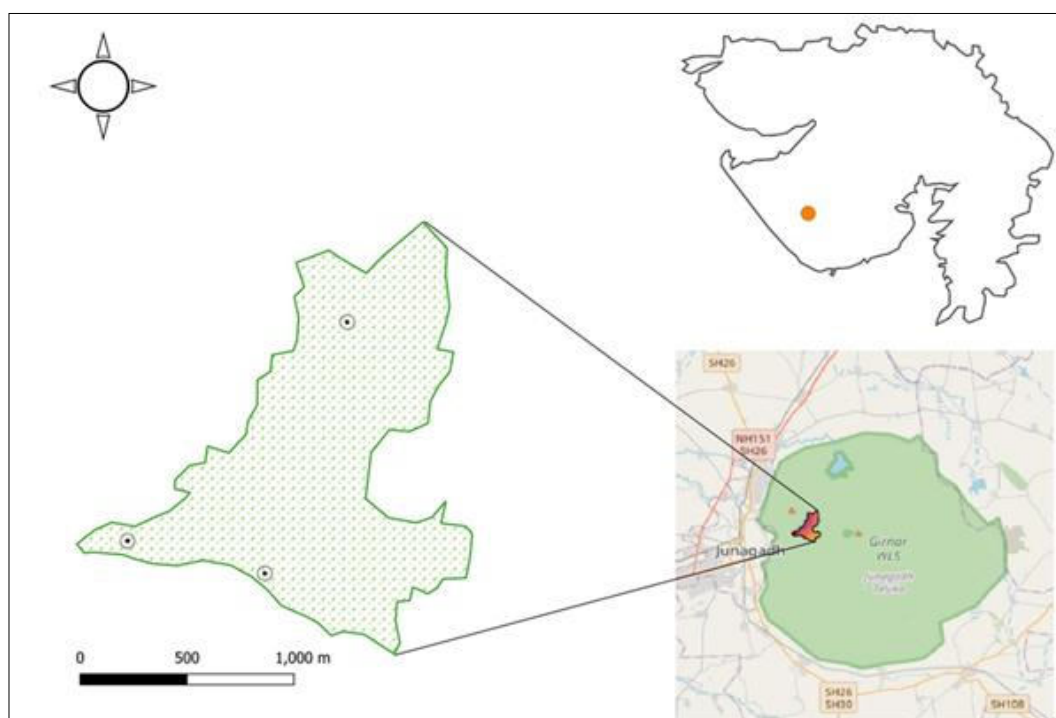


Fig 2: Map of study area – Bhavnath Taleti, Junagadh city, Gujarat.

Materials and methods

Field examinations were conducted for a period of four years, from November 2017 to March 2021. The present study is based on observations made over a total of twenty

months (over a four-year period). We kept a random sampling count and noted the maximum count of the number of individual in the selected study area. The information as to 192 days 64 sampling days each three

selected point. Observations were taken mainly from morning 0800 to 1200 hrs and again from 1400 hr to 1700 hrs. In addition, occasional observations were also taken between the 1200 hr and 1400 hr. time slab. The usual 7 to 9 hr. period the observers spent in each sampling day and around 500 m range of distance to study. The suitable habitat was covered on foot. The observations were carried out with two binoculars - Nikon Aculon 10-22x50 and Nikon 10x50 and photographs were taken with a Canon 7D Mark II with 300mm (f2.8) lens. This being a new species to the area, an extensive search was initiated in following days and literature as well as 'eBird' data for the Gujarat state, along with sightings from other bird watchers, sightings reported on social media and other sources were collected. Data analysis for species sightings, count and observations was carried out in Microsoft Excel 2007.

Observations

The winter months of February and March are the months of optimum sightings. In these two months, the majority of the water bodies were drying up. We observed the Forest Wagtail around such water points. The habit of this bird is to walk on the ground and capture insects in the wet soil, leaf litter and from the dry surface (Fig 3). It has a habit of moving its body and tail sideways, even when feather preening, walking, feeding and capturing prey. If disturbed, the birds instantly flew to the upper canopy or to higher branches of a tree, wagging its body and hiding in the leaves. We observed two or even three birds feeding together; at such events they are quite bold and tolerate human and cattle presence in their areas (Fig 4). Another of our observation was that it frequently associates with Olive-backed Pipit (*Anthus hodgsoni*).

We have seen that the *D. indicus* starts to arrive in November, but there is usually only single bird at that time. The encounter rate is poor in November as the birds are not

regularly seen in this area. It is possible that since it was early-winter period, the birds may not have settled in any particular area and they were in process of selecting favorable habitat. Even at this time, they were seen near water points (Fig 5).



Fig 3: Observing the *D. indicus* capture an insect in dry leaf litter in mid-winter at Bhavnath Taleti. (Photo by Saswat Mishra)



Fig 4: Three *D. indicus* capturing and feeding on insects in habitat dried seasonal stream in late winter season at Bhavnath Taleti. (Photo by Gaurang Bagada)

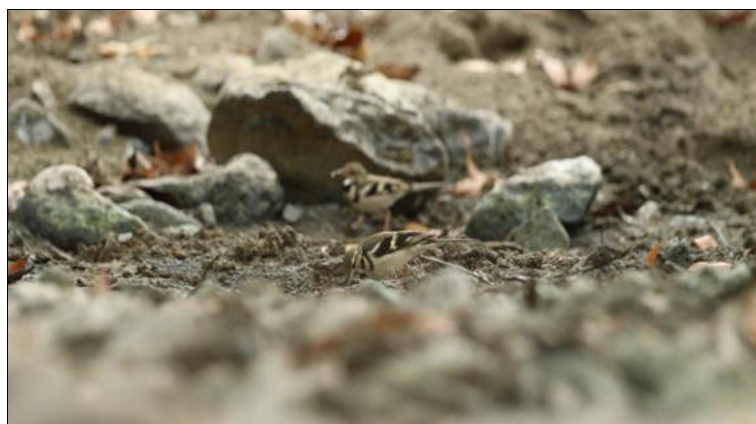


Fig 5: Observing two *D. indicus* drinking water in late winter at Bhavnath Taleti. (Photo by Gaurang Bagada)

Results

After twenty months of observations at the study site, we found a maximum of 10 individuals in the winter of 2019-2020; 9 birds were seen in 2020-2021 and 7 in 2018-2019. Only 4 individuals were observed in the winter of 2017-2018. On collecting records from published sources, the social media, birding websites and from personal observations from other bird watchers of Gujarat, the Forest Wagtail has been observed in 10 districts namely; Junagadh, Gir-somnath, Dang, Kutch, Narmada, Jamnagar, Rajkot, Porbandar, Anand and Gandhinagar.

The peak sightings at Bhavnath Taleti were in February and March. The number of individuals seen in December and January were comparatively less. The lowest count was in November. In 2017-2018, a maximum of 4 birds were seen in March. The month-wise sightings of number of individuals of *D. indicus* seen in this area are given in (Fig 6). An analysis of these sightings suggests that the maximum numbers of birds are seen in March.

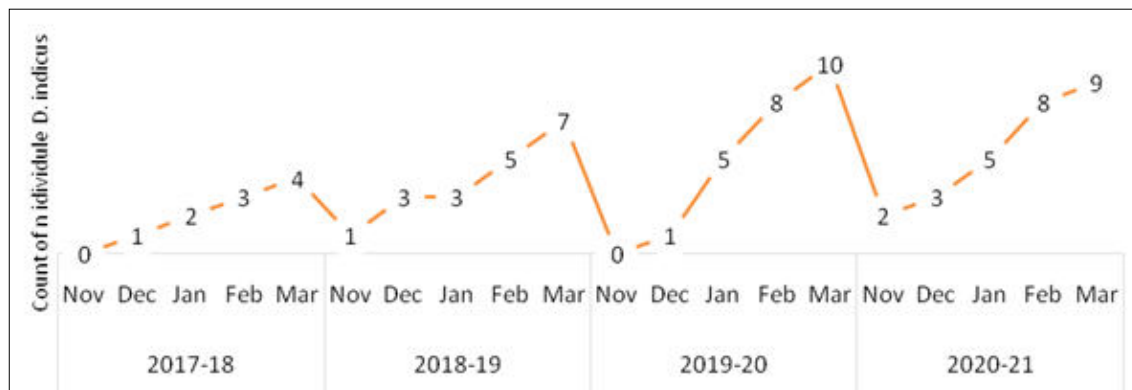


Fig 6: Month-wise number of individuals of Forest Wagtail in the winter months of 2017-2021 in study area.

The present distribution of the *D. indicus* in Gujarat is interesting. We divided Gujarat into 5 major regions; Saurashtra, Kutch, south Gujarat, central Gujarat, and north Gujarat. Based on the records collected by us, we can say that the maximum numbers of sightings are from Saurashtra, south Gujarat and Kutch; there are reported in two National Parks and five Wildlife Sanctuaries in the Gujarat state. We found that there were only single records from North Gujarat and Central Gujarat.

The maximum sightings from Saurashtra are from Junagadh district, and the maximum numbers of birds were seen by us at Bhavnath Taleti. Other locations in Junagadh district where the Forest Wagtail has been sighted are Bordevi Temple in Girnar WLS and in Gir National Park and Sanctuary. In Gir-Somnath district, 4 birds were seen in February at Prashnavada Wetland. Though it is near the coast, this wetland is surrounded by *Grevillea striata* plantations done by the Gujarat government. Many sightings have been reported from Jamnagar district from four locations – one of the locations is the Khijadiya Bird Sanctuary. Three different areas from Rajkot district have

also noted the presence of Forest Wagtail; Jasdan, Fofal Dam and Randarda Lake. Two birds had been observed at Barda, in Porbandar district. In south Gujarat, most records are from the two districts of Dang and Narmada. In Dang, sightings in two protected areas of Vansada National Park and Purna Wildlife Sanctuary are known. Two individuals in 2017 and three birds in 2017, 2019 and 2021 were seen in Vansada National Park; in 2008, one bird was sighted in Purna WLS. In Narmada district, a sighting from Shoolpaneshwar WLS is known. The Kutch district is the largest district in Gujarat. A scrub forest near Bhuj is the major sighting place in this district; here, two individuals were seen in 2019 and other single birds were seen in 2016 and 2019. The north Gujarat region has only one sighting reported from Gandhinagar in January 2017. Also, there is only one sighting reported from in Pariej Lake, Anand district, situated in central Gujarat (Fig. 7). Thus, the number of sightings from north and central Gujarat are less when compared to other regions of the state. All sightings and related literature reference of Forest Wagtail from Gujarat, region-wise, are given in (Tab 1).

Table 1: Sightings of Forest Wagtail from 1946 to 2021 in Gujarat region-wise

Region	Observation site	Date	No. of individual(s)	Observers	Source
South Gujarat	Pimpri, Dang	1946-04-14	1	Salim Ali	(Ali 1952) ^[1]
		1948-03-22	1	Salim Ali	(Ali 1952) ^[1]
	Purna WLS, Dang	2008-01-29	1	Mukesh Bhatt	Personal Communication
	Vasda NP, Dang	2017-02-24	1	Mukesh Bhatt	Personal Communication
		2017-04-14	2	Viral Pankaj	eBird
		2020-10-17	1	Viren Bachu Desai	Personal Communication
		2021-04-19	1	Mukesh Bhatt	Personal Communication
	Namgir, Rajpipla, Narmada	1982-12-10	1	SG Monga & Rishad Naoroji	(Monga & Naoroji, 1984) ^[16]
	Shoolpaneswar WLS, Narmada	2016-12-24	1	Viral Joshi	Ebird
2017-01-08		1	Ashish Gajjar	(Gajjar, 2017)	
2021-03-16		1	Mukesh Bhatt	Personal Communication	
Saurashtra	Jasdan, Rajkot	1987-11-19	1	Satyajit Khachar	(Khachar, 1990) ^[14]
	Fofal dam, Rajkot	2015-03-06	1	Milan Sojitra	eBird
	Randarda Lake,Rajkot	2020-02-14	1	Priyank Dhami	(Dhami, 2020) ^[3]
	Gir National park and Sanctuary, Junagadh	1962-12-20	1	R S Dharmakumarsinhji	(Dharmakumarsinhji, 1963) ^[4]
		1989-12-24	1	Santharam V	eBird
		2017-01-28	1	Frank Thierfelder	eBird
		2019-08-01	1	Ajay Drokdiya	Personal Communication
		2021-01-03	1	Pranav Vaghasiya	Personal Communication
	Bordevi temple, Girnar WLS, Junagadh	2014-04-06	1	Ankit Shukla	Personal Communication
		2020-12-07	1	Gaurang Bagada	Present study
	Bhavnath Tadeti, Girnar, Juanagdh	2015-12-28	1	Viral Joshi	eBird
		2016-12-29	1	Ravi Patel & Gaurang Bagada	Present study
		2018-02-16	3		
		2018-03-17	4		
2019-02-01		7			
2020-03-19		10			
2021-03-12		9			
Prasnavada . Sutrapada, Gir-	2017-12-02	1	Ravi Patel	(Patel, 2019) ^[18]	

	somnath	2018-02-25	2	Ravi Patel	(Patel, 2019) ^[18]
		2019-02-28	4	Ravi Patel	Present study
		2020-12-01	2	Ravi Patel	Present study
	Medical Campus, Jamnagar	2005-02-23	1	Maulik Varu	(Varu <i>et al.</i> , 2005) ^[20]
	Valsura, Jamnagar	2013-03-05	1	Prasad Ganpule	(birdinggujarat website)
	Ranjitsagar dam, Jamnagar	2016-01-24	1	Devrat Mori, Amish Patel	(Mori & Patel, 2017) ^[16]
	Bedi Road, Jamnagar	2017-01-22	1	Bhargav Raval	eBird
	Khijadiya BS, Jamnagar	2019-01-27	2	Chirag Solanki	eBird
	Barda WLS, Porbandar	2009-02-18	2	Chirag Solanki	Personal Communication
Kutch	Mahuva, Bhavnagar	2017-03-23	1	Batuk Bhil	Personal Communication
	Bhuj, Kutch	1967-01-10	1	Maharaj Kumar Himmatsinhji	(Himmatsinhji, 1967) ^[11]
	Vijayvilas, Mandvi, Kutch	1969-12-31	1	Maharaj Kumar Himmatsinhji	(Himmatsinhji, 1969)
	Kutch	2019-01-09	1	Saurabh Sawant & Chetan Sharma	eBird
	Pragsar Tank, Bhuj, Kutch	2019-02-14	2	Shantilal Varu	eBird
North Gujarat	Chadva Rakhal, Bhuj, Kutch	2016-01-30	1	Shantilal Varu	(Varu <i>et al.</i> , 2016) ^[21]
	Gandhinagar	2017-01-21	1	Irshad Theba	eBird
Central Gujarat	Pariaj Lake, Anand	2017-02-19	1	Brijmohan Thakur	(Thakur, 2017) ^[19]

In the recent checklist of the birds of Gujarat by Ganpule (2016)^[6], the Forest Wagtail is given as an uncommon to rare winter visitor, in south Gujarat, and rare in Saurashtra with sightings from Gir NP, Jamnagar and other scattered

records; it is given as a vagrant in Kutch. The photos on the website 'Birds of Gujarat' are from south Gujarat, Kutch and Saurashtra. Other birding websites and personal records also suggest that this species is seen mainly in these regions.

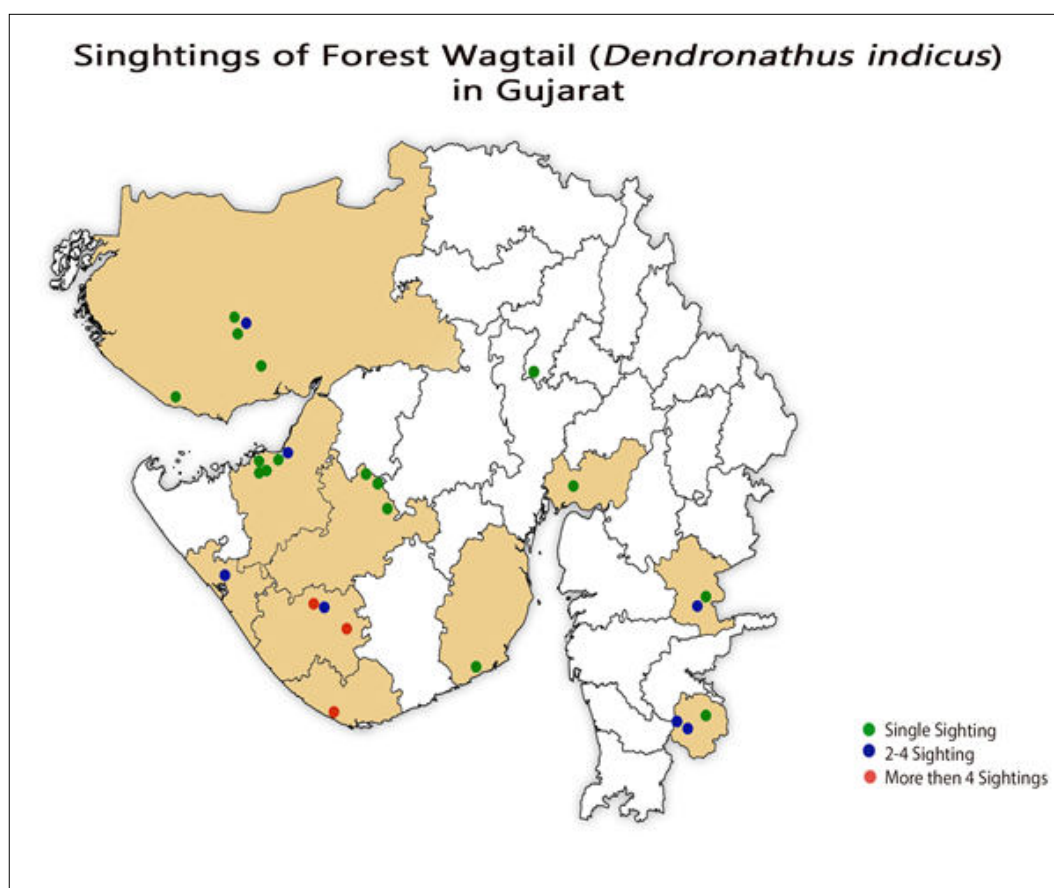


Fig 7: Distribution map of sighted Forest Wagtail *D. indicus* in Gujarat state.

Discussion

Our collected data is comprehensive and spread over a long time. Based on this data, we can say that there is a regular winter migrant in Bhavnath Taleti, Junagadh area and the highest count of 10 birds in a small area in March 2020 suggests that in suitable habitat, more individuals can be seen together. Our study site is of 8.2 km² non-protected area hosts these birds regularly. For other areas, the Forest Wagtail is uncommon in Saurashtra and south Gujarat and rare in Kutch, central Gujarat and north Gujarat. This species is widely distributed and there are records from almost all the regions of the state. South Gujarat forests also

seem to be a regular area where the *D. indicus* visits in the winter.

The habitat of the study area is similar to many other habitats in Saurashtra and in the forest belt from north Gujarat to south Gujarat. Hence, it is likely that the Forest Wagtail could occur in these areas. February and March are the months in which more birds are seen and hence, it is in these months that suitable habitats be explored for this species. It is likely that it could be occurring in other parts of the state but is overlooked in the habitat as it is well camouflaged.

The *D. indicus* is found in the winter, from November till

March, in suitable habitat. But, since numbers are higher in February and March, it would suggest that the Forest Wagtail is seen, especially in Bhavnath Taleti area, during its return migration (or in early spring migration). If more places with suitable habitat of water bodies along with tree groves are explored in Saurashtra, this would result in more sightings of this species. We suggest studying such habitats in Amreli, Gir-somnath, Junagadh, Bhavnagar and Porbanadar districts. Further, we ask bird watchers in north Gujarat and central Gujarat to be on the lookout for this species. Since there are good forests in north Gujarat and central Gujarat, it is most likely that the Forest Wagtail could be occurring there. Forest areas of Jessore Sanctuary, Balaram Ambaji WLS in the north and Ratanmahal WLS, Shoolpaneshwar WLS and Jambhughoda WLS in the central part of the state should be visited in these months. We recommend state-wide surveys to know more about the status and distribution of the Forest Wagtail *D. indicus* in Gujarat.

Acknowledgments

We special thanks to Harshil Patel and Prasad Ganpule helping and inspire for study and represent for this vital examination. We are thankful to Chirag Solanki, Mukesh Bhatt, Pranav Vaghasiya, Ankit Shukla, Viren Bachu Desai, Batuk Bhil and Ajay Drokdiya for sharing their sightings and details. Also grateful thanks to Saswat Mishra for sharing photographs and sightings of this species.

References

1. Ali S. The Birds of Gujarat. Part II. J. Bombay Nat. Hist. Soc. 1952;52(4):735-802
2. Ali S. The books of Indian birds. Thirteenth edition revised by J.C. Daniel Bombay Natural history. Mumbai; c2012.
3. Dhami P. Forest Wagtail *Dendronanthus indicus* in Rajkot. Flamingo. 2020;13(2 & 3):32.
4. Dharmakumarsinhji RS. The Forest Wagtail *Motacilla indica* Gmelin in the Gir Forest, Saurashtra. J. Bombay Nat. Hist. Soc. 1963;60(1):261.
5. Ganpule P. Second update to the Gujarat checklist: March 2020. Flamingo Gujarat. 2020;18(2-3):11-21
6. Ganpule P. The birds of Gujarat: Status and distribution. Flamingo. 2016;8(3)-12(4):35
7. Grewal B, Harvey B, Pfister & Pfister O. A photographic guide to the birds of India and the Indian Subcontinent, including Pakistan, Nepal, Bhutan, Bangladesh, Sri Lanka & the Maldives. 1st ed. Singapore: Periplus Editions (HK) Ltd; c2002.
8. Harrison J. A field guide to the birds of Sri Lanka. 1st ed. Oxford, U.K: Oxford; c1999.
9. Grimmett R, Inskipp C, Inskipp T. Birds of the Indian Subcontinent. 2nd ed. Christopher Helm & Oxford University Press. London; c2011.
10. Gujjar A. Forest Wagtail in Shoolpaneshwar WLS. Flamingo. 2017;15(3):21.
11. Himmatsinhji MK. Some interesting migrants in Kutch. J Bombay Nat. Hist. Soc. 1967;65(1):225.
12. Himmatsinhji MK. Grey-headed Myna in Kutch. J. Bom. Nat. Hist. Soc. 1970;67:332-333
13. Kannan R, Santharam V, Kannan A, Nagarajan VM. True winter distribution of the Forest Wagtail *Dendronanthus indicus* in India. Indian Birds. 2018;14(2):33-36.
14. Khacher S. Forest Wagtail *Motacilla indica* at Jasdan, Gujarat. J. Bombay Nat. Hist. Soc. 1990;86(3):453
15. Alström P, Mild K. Pipits and Wagtails of Europe, Asia and North America; c2003.
16. Monga SG, Naoroji R. Birds of the Rajpipla forests – South Gujarat. With notes on nests found and breeding recorded and some new observations. J. Bombay Nat. Hist. Soc. 1984;80(3):575-612.
17. Mori D, Patel A. Sighting of Forest Wagtail. Flamingo. 2017;15(2):23.
18. Patel R. Some significant avian records from Prashnavada Wetland, near Sutrapada, Gir-Somnath District. Flamingo. 2019;17(2):10-13.
19. Thakur B. Sighting of Forest Wagtail. Flamingo. 2017;15(2):23.
20. Varu M, Rupapara J, Kacha P. Forest Wagtail at Jamnagar. Flamingo. 2005;3(2):10.
21. Varu S, Khatri G, Parmar G, Tank M. Forest Wagtail in Kutch. Flamingo. 2016;14(2):21.