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### REVIEW

**DISTRIBUTION RECORDS AND EXTENDED RANGE OF THE SRI LANKA FROGMOUTH *BATRACHOSTOMUS MONILIGER* (AVES: CAPRIMULGIFORMES: PODARGIDAE) IN THE WESTERN GHATS: A REVIEW FROM 1862 TO 2015**

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## DISTRIBUTION RECORDS AND EXTENDED RANGE OF THE SRI LANKA FROGMOUTH *BATRACHOSTOMUS MONILIGER* (AVES: CAPRIMULGIFORMES: PODARGIDAE) IN THE WESTERN GHATS: A REVIEW FROM 1862 TO 2015

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**Abstract:** The Sri Lanka Frogmouth (or Ceylon Frogmouth) *Batrachostomus moniliger* is an endemic resident bird confined to the evergreen and secondary forests of Sri Lanka and the Western Ghats of India. The earlier distribution range of the Frogmouth was from the Uttara Kannada District of Karnataka to the southern tip of India and most of Sri Lanka. Recently, the range has been extended further north to Goa and up to Mumbai in Maharashtra. A number of observations summarized into 202 distributional records (published reports and records uploaded to eBird basic data set, Oriental Bird Images, and GBIF.org from the years 1862 to 2015) of the Frogmouth have been tabulated with its maps, and reviewed for their state-wise distribution records. The need of undertaking surveys to fill up the gaps in their distribution range as well as any further northward extension till the culmination of the Western Ghats has been discussed. It is urged that taxonomical and molecular phylogenetic studies are required to be carried out in different populations of Frogmouths across the entire range.

**Keywords:** *Batrachostomus moniliger*, Sri Lanka Frogmouth, distribution range, eBird, endemic, evergreen forests, GBIF, Oriental Bird Images, Western Ghats.

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**Conflict of Interest:** The authors declare no competing interests.

**Author Contribution:** AM conceptualised the review. AM, ST and RP collected the literature data, compiled and wrote the paper. RP contributed image and created the figures and the online map.

**Author Details:** DR. ANIL MAHABAL has completed his doctoral research on population ecology of Common Myna. He served for 37 years in Zoological Survey of India, retiring as the Additional Director/Scientist 'F'. He has also authored many scientific papers related to the population, roosting behaviour, status reports, reviews, checklists and colour aberrations particularly in Aves and other animals. He is also president of Institute of Natural History Education and Research (INHER), Pune. SANJAY THAKUR is a naturalist and an avid natural history enthusiast. He has authored many research papers on Aves and reptiles. He has been working for the conservation of our natural heritage. RAJGOPAL PATIL is an IT professional and a natural history enthusiast. He has been observing birds for the last 28 years. He is keenly interested in bioacoustics of birds and has been recording and analysing calls of birds and other animals. He has published papers and articles on this topic.

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## INTRODUCTION

The frogmouths are a group of stocky nocturnal birds distributed across Oriental and Australasian Regions (Ali 1949; Gruson 1976). The 14 known species of frogmouths belong to the family Podargidae constituting three genera - *Rigidipenna*, *Podargus* and *Batrachostomus* (Holyoak 2016). One of these, the Sri Lanka Frogmouth (or Ceylon Frogmouth) *Batrachostomus moniliger* Blyth, 1849 (Images 1 & 2) is of Indochinese affinity (Ripley 1959). It is a medium-sized sexually dichromatic bird with a large-head, hooked bill and large forward-facing yellow eyes. It is arboreal, nocturnal, shy and seldom seen during the day time. Also apparently not very vocal during the day, hence possibly less rare than it appears. It is a resident and locally common bird confined to dense evergreen, humid primary and secondary forest (adjacent degraded forest), and thick bamboo; but usually avoids plantations and disturbed forests. The bird is insectivorous in habit, its diet consisting of beetles, grasshoppers and moths; the breeding season is mainly from January to April but continues till October. The nest is placed in the fork of a small tree or horizontal branches 2m and above from the ground. Only one egg is laid which is white and elliptical. Both sexes share incubating duties (Ali & Whistler 1936; Ali 1969, 1999; Marshall 1978; Ali & Ripley 1983; Cleere & Nurney 1998; Baskaran 1999; Holyoak 1999, 2001; Cleere 2010; Sashikumar et al. 2011; Rasmussen & Anderton 2012; Grimmett et al. 2013; Holyoak & Kirwan 2016). It is a bird endemic to the South Asian mainland and Sri Lanka (Jathar & Rahmani 2006) and has been categorized as Least Concern in the IUCN Red List (BirdLife International 2015). It is listed in Schedule I, Part III (Birds) of the Indian Wildlife (Protection) Act, 1972 (as amended up to 2006).

### Distribution range

Blyth described *Batrachostomus moniliger* based on Layard's material from Ceylon (= Sri Lanka) (Jerdon 1862; Hume 1874, 1876; Baker 1922, 1925, 1927, 1934; Baker & Inglis 1930; Ali 1969, 1999; Ali & Ripley 1983). Baker (1927, 1934) provided the distribution of frogmouths from Wayanad south through Travancore to the whole of Ceylon (= Sri Lanka). Further, he mentioned that Bell collected eggs/nest in Karwar, Kanara District (= Uttara Kannada in Karnataka State). Abdulali (1949), Ripley (1961), Ali (1949, 1969, 1999), Ali & Ripley (1983), and Daniels (1997) have stated that the range of these frogmouths is from the southern heavy-rainfall tracts of Western Ghats, India from ca. 15°N latitude in Uttara Kannada District, Karnataka south to



Image 1. Sexually dimorphic pair of the Sri Lanka Frogmouth *Batrachostomus moniliger*. The grey-brown male on right and chestnut brown female on left.



Image 2. Female Sri Lanka Frogmouth in its typical habitat photographed near Tambdi Surla, Goa.



Thiruvananthapuram District in Kerala, up to ca. 1,200m (and southern tip of the country in Tamil Nadu by Sugathan 1981); and in Sri Lanka, throughout the forest areas up to ca. 1,800m. Henry (1971) has pointed out that the birds are rare but widely distributed in Sri Lanka. Lainer (2004) documented the first observation of the frogmouth in Goa at Bondla Wildlife Sanctuary in 1996. Rasmussen & Anderton (2012) also mentioned that the Sri Lanka Frogmouth occurs in the Western Ghats from south of Goa and in Sri Lanka. Giri (2002) recorded the Sri Lanka Frogmouths further north of northern Karnataka in Kolhapur District, Maharashtra and Kasambe (2012) sighted them in Mumbai, Maharashtra; indicating that at present their northern most distribution range has extended up to Mumbai.

## MATERIALS AND METHODS

The number of observations summarized into 202 distribution records of Sri Lanka Frogmouth, from 1862 to 2015, from all the states in its distribution range falling under the Western Ghats, India have been reviewed in this paper. Out of these records 122 are from the published literature, while the remaining sightings of the frogmouths are from the documented observations by various bird watchers, nature watch groups uploaded to eBird Basic Dataset (2015) and GBIF.org (2016), as well as from the photographs uploaded on the Oriental Bird Images (2015) between 2001 and 2015.

Since 2001 technological advancements such as eBird and other internet platforms have transformed the way bird watchers have recorded their observations. Hence, we have considered the previous distribution records of frogmouths from the year 1862 to 2000 and recent records from the year 2001 to 2015. While reviewing the records, we considered the locality along with geographical co-ordinates, date of sightings and general observations on the frogmouths to prepare the table. We acknowledge in some cases the geographical coordinates associated with the observational record have the limitation of not being the exact location of the observation.

## RESULTS

### Distribution records

The details of previous (1862–2000) and recent (2001–2015) distribution records of Sri Lanka Frogmouths in the Western Ghats ranging particularly

in the states of Kerala, Tamil Nadu, Karnataka, Goa and Maharashtra have been given in Table 1 and depicted in Figs. 1 and 2. State-wise discussion are given below:

### Kerala

The first nest and remains of eggs of Sri Lanka Frogmouth were found in Travancore by T.F. Bourdillon and the number of nests by J. Stewart during or before 1876 (Hume 1876, 1890; Fergusson & Bourdillon 1904; Baker 1914–15; Baker 1927, 1934; Baker & Inglis 1930; Ali 1969, 1999). T.F. Bourdillon & J. Stewart also collected many specimens from Travancore (Ali & Whistler 1936). After a gap of about 50 to 60 years, in 1935, Ali (1935) recorded the Frogmouth in the Malabar zone (Travancore and Cochin - now Kerala) then again, after a gap of 40 to 50 years, the Frogmouth was recorded in various districts of Kerala state lying in the Western Ghats range either in singles or in pairs, particularly in Wayanad, Palakkad, Thrissur, Idukki and Pathanamthitta by various workers (Vijayan 1979; Sugathan 1981; Zacharias & Gaston 1993; Santharam 1995, 2006) (Table 1).

Recent sightings of the Frogmouth have been recorded by various researchers (Eldhose 2001a & b; Sashikumar & Palot 2005; Praveen & Nameer 2007, 2008; Sashikumar et al. 2010, 2011, 2014; Praveen 2015) and nature watch groups between 2003 and 2015. The observations by these nature watch groups were sourced from the eBird Basic Dataset (2015) and GBIF.org (2016) with photographs uploaded on Oriental Bird Images (2015). Further, Table 1 indicates that most of these sightings were from the bordering areas of Idukki and Ernakulam districts and a few sightings in other districts of the state, such as Thiruvananthapuram, Kollam, Pathanamthitta, Thrissur, Palakkad, Malappuram, Kozhikode, Wayanad, Kannur, and Kasaragod except for the district of Alappuzha.

### Tamil Nadu

There are seven previous sightings of the Frogmouth from Anaimalai Hills of Coimbatore District between 1991 and 1993 (Kannan 1993, 1994 a,b, 1998) and further, according to him these constitute the first record of the species from Tamil Nadu. However, there are a few records of some specimens collected from the districts of Madurai in 1986 and Tirunelveli in 1992 (Dutta 2009).

The recent sightings of the Frogmouth are being recorded mostly from Kanniyakumari, Tirunelveli, Virudhunagar, Tiruppur, Coimbatore and Nilgiris districts from 2004 to 2015 (Johnsingh 2001; Swami 2006; Shrivankumar et al. 2012; eBird Basic Dataset 2015;

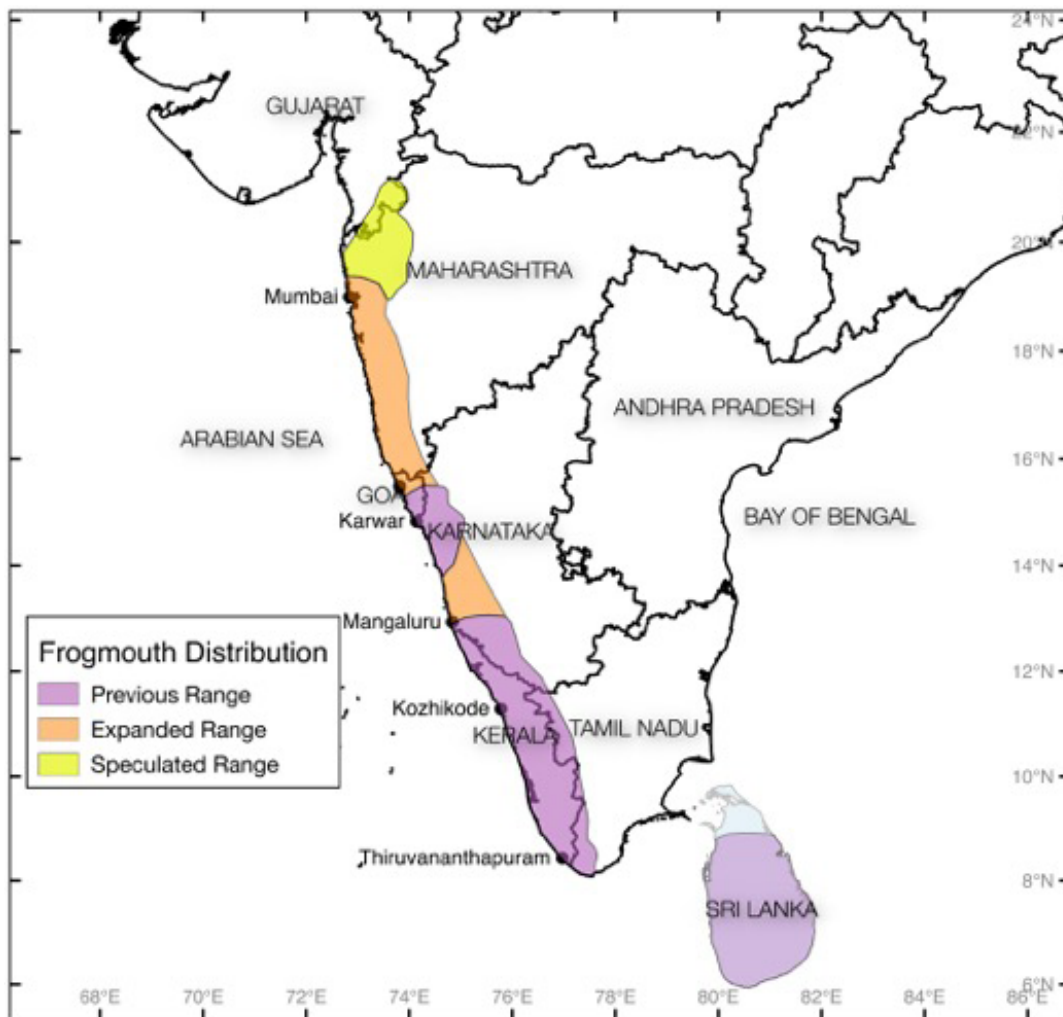


Figure 1. Distribution of Sri Lanka Frogmouth in India and Sri Lanka

Oriental Bird Images 2015 and GBIF.org 2016) (Table 1).

It was noticed that the previous and recent sightings of these birds from Coimbatore District are mostly from Anaimalai Hill ranges. Santharam (2005) suggested that the Frogmouth is a locally threatened bird of the state and are in need of conservation efforts on priority.

#### Karnataka

The most previous records of Sri Lanka frogmouths were from various places in Uttara Kannada District (Davidson 1895, 1898). Thereafter, eggs, nest and nestlings were collected by T.R. Bell during or before 1927 from Karwar (now Uttara Kannada) (Baker 1927, 1934). Koelz (1942) surveyed birds in Londa neighbourhood and from Uttara Kannada during 1938 and Ali (1942–1943) in Mysore (now Karnataka) state including Bababudan Hills and forests adjoining Coorg (now Kodagu), but they did not record any Frogmouth from these areas. After a

gap of about 40 to 45 years, the birds have been again sighted from 1983 to '85 in Uttara Kannada District by Daniels (1984, 1986) and Borges (1986). There are some records of specimens collected from Kodagu District and Jog Falls, Shimoga District in 1977 (Dutta 2009).

Recently, Kumara & Singh (2006) and others have sighted a number of Frogmouths in different areas of the Western Ghats between 2001 and 2003. Barve (2010) and Barve & Warriar (2013) have sighted these birds commonly in Sharavathy Valley of Udupi District. Beside this, the birds were sighted by a number of observers in Kodagu, Chikmagalur, Udupi, Shimoga and Uttara Kannada districts from 2005 to 2015 (eBird Basic Dataset 2015; Oriental Bird Images 2015) (Table 1).

#### Goa

There were a number of studies carried out on the birds of Goa (Grubh & Ali 1976; Abdulali 1980; Rane

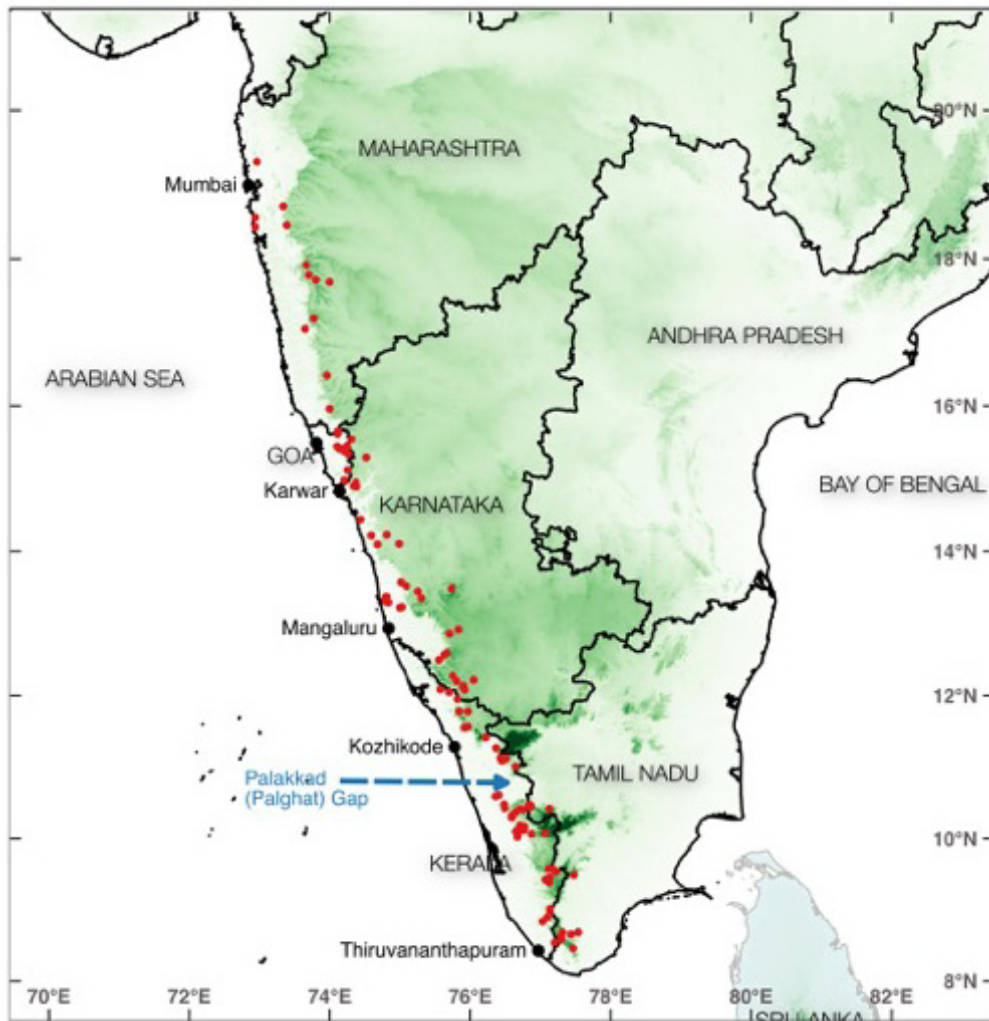


Figure 2. Distribution records of Sri Lanka Frogmouth in Western Ghats, India

1983; Saha & Dasgupta 1992; Lainer 1999) but none of these studies have recorded the Sri Lanka Frogmouth in Goa. Lainer (2004) indicated that Holt reported the Frogmouth for the first time in 1996 at Bondla Wildlife Sanctuary and then by a number of birdwatchers between 1996 and 2000 by voice record. Rasmussen & Anderton (2012) indicated that the Frogmouth occurs in the Western Ghats southwards from Goa.

From 2001 until 2015 there are a number of recent observations and photographic evidences of Sri Lanka Frogmouths from various wildlife sanctuaries and national parks from South Goa and North Goa districts (Lainer & Alvares 2013; eBird Basic Dataset 2015; Oriental Bird Images 2015; GBIF.org 2016) (Table 1).

### Maharashtra

There were a few surveys carried out on birds in Khandala, Mahabaleshwar along the Sahyadri Mountains

(Western Ghats), and South Konkan by Fairbank (1876) and Vidal (1880) respectively, but they did not sight the Frogmouth in these regions. Neither was the bird mentioned in the Handbook to the birds of Bombay Presidency (Barnes 1885), nor in the Checklist of Birds of Maharashtra (Abdulali 1981). Giri (2002) recorded Sri Lanka Frogmouth for the first time in the state of Maharashtra from Kolhapur District in November 1998.

Thereafter, Kasambe (2012) sighted the Frogmouth in Mumbai during March 2011. Recent sightings of these birds are recorded in Raigad District (Prashanth 2009; Oriental Bird Images 2015) and in Sindhudurg District (eBird Basic Dataset 2015). From 2014 to 2015, Sayyed & Mahabal (2016) recorded the Frogmouth in the area between Kolhapur and Mumbai, particularly in the districts of Sindhudurg, Ratnagiri, Sangli, Satara and Raigad falling under the Western Ghats, and filled up a big gap in its distribution range.

**Table 1. Distribution records of Sri Lanka Frogmouth in Western Ghats (Parts of Kerala, Tamil Nadu, Karnataka, Goa and Maharashtra states), India from 1862 to 2015.**

Locality	Co-ordinates	Date	General observations	Reference/Source
<b>Kerala</b>				
Peria pass (near Mananthavady) leading from Malabar into the Wayanad	--	During of before 1862	Obtained by Capt. Roberts.	Jerdon (1862); Whistler & Kinnear (1935)
Hills near Mynall, south Travancore (now southern Kerala)	---	During or before 1876	i) Nest with remains of eggs found first (by T. F. Bourdillon). ii) Number of nests and eggs collected (by J. Stewart).	As cited by Hume (1876); Baker & Inglis (1930); Baker (1927 and 1934); Whistler & Kinnear (1935); Ali (1969).
Mynall, Travancore (now southern Kerala)	--	19.xii.1874 and 2.iii.1876	One female and one male (by T. F. Bourdillon)	Ali & Whistler (1936)
Aneichardi Estate, Travancore (now southern Kerala)	--	No date	Two males and one female (by Stewart)	Ali & Whistler (1936)
Venture Estate, Travancore (now southern Kerala)	--	17.i.1915	One male and one female (by Stewart)	Ali & Whistler (1936)
Wayanad or Ghats of Nilghiris	--	During or before 1883	No specimens were met or obtained.	Davison (1883)
Travancore (now southern Kerala)	--	24.ii.1904(?)	i) Nest with young bird ii) Specimen in BNHS Museum	Fergusson & Bourdillon (1904)
Travancore (now southern Kerala)	---	11.v.1910	Egg (dry) (collected by Jenkins) in MCZ.	GBIF.org (2016)
Travancore (now southern Kerala)	--	--	Exhibited adult female and nest with eggs (collected by J. Stewart) in British Museum.	Baker (1914-15)
Malabar zone (Travancore and Cochin) (now Kerala)	--	During or before 1935	Common	Ali (1935)
Thattakad along old High Range road, Idukki District	10°4'1.65"N & 76°52'27.07"E	--	Single	Ali (1969 and 1999)
Thattakad, North Travancore	--	--	One specimen in collections of BNHS, Mumbai.	Abdulali (1972)
Varayatumudi, Parambikulam WS and Sholayar range, Palghat District	10°25'N & 76°43'E	1976	Single	Vijayan (1979)
Kunthipuzha, near Silent Valley dam-site, Palghat District	11°05'33"N & 76°27'15"E	April to September, 1976	Single	Sugathan (1981)
Between Silent Valley and Mukkali, Palghat District	11°05'33"N & 76°27'15"E	-do-	Three	Sugathan (1981)
Opposite to Mukkali rest house, Palghat District	11°05'33"N & 76°27'15"E	-do-	Single	Sugathan (1981)
Parambikulam area, Palghat District	10°25'N & 76°43'E	-do-	Seven	Sugathan (1981)
Sholayar area, Palghat District	10°25'N & 76°43'E	-do-	Three	Sugathan (1981)
Near river at Oru Komban kutti, Palghat District	10°22'51"N & 76°39'17"E	-do-	Single	Sugathan (1981)
Vazhachal area, Palghat District	10°18'10.19"N & 76°35'34.45"E	-do-	Single	Sugathan (1981)
Thattakad, foothills of Munnar, Idukki District	10°4'1.65"N & 76°52'27.07"E	-do-	No sightings	Sugathan (1981)
Mangaladevi hills in Periyar WS, Idukki District	9°32'19.30"N & 77°12'41.21"E	-do-	Single	Sugathan (1981)
Sabarimalai area between Uppupara and Pamba rivers, Pathanamthitta District	9°25'36.22"N & 77°4'16.02"E	-do-	Seven	Sugathan (1981)
Thrivani, side of Pamba river, Pathanamthitta District	9°23'10.49"N & 77°7'26.99"E	-do-	Nine	Sugathan (1981)
Wayanad District	11°30'- 11°58"N & 75°45'- 76°28'E	June 1985 to September 1988	Found breeding birds	Zacharias & Gaston (1993)



Locality	Co-ordinates	Date	General observations	Reference/Source
Viraguthodu area, Chimmini WS, Trichur (now Trissur) District	10°25'45.91"N & 76°29'27.93"E	March 1992	Pair	Santharam (1995)
Thattakkad Bird Sanctuary, Idukki District	10°7'52.0206"N & 76°42'21.6612"E	March 1994	Breeding resident birds	Sugathan & Varghese (1996)
Tirunelli, Wayanad and at Parambikulam	--	--	Breeding birds recorded	Gaston & Zacharias (1996)
Thattakad Bird Sanctuary	--	December 1999	i) Very common inside and outside sanctuary. ii) Sighted one male, two females and heard calls of more than 10 birds.	Simpson (2000)
Salim Ali Bird Sanctuary, Thattakad, Idukki District	10°7'52.0206"N & 76°42'21.6612"E	2000-2001	Calls	Eldhose (2001a & b)
Thattakkad Bird Sanctuary, Ernakulam District	-	2002	Observed by KV Eldhose. Confirmed breeding.	Pittie (2002)
Chimmini WS, Thrissur District	10°28'56.6754"N & 76°29'3.1164"E	2002	Observed by P. O. Nameer, R. Hari, V. Ratheesan, M. C. Thajudheen, K. K. Sreenivasan. Confirmed breeding. Nest with young.	Pittie (2002)
Aralam WS, Kannur District	12°02'50"N & 75°41'54"E	-	-	Cited by Islam & Rahmani (2004)
Kottiyoor Reserve Forest, Kannur District	12°05'08"N & 75°34'32"E	-	-	Cited by Islam & Rahmani (2004)
Parambikulam WS, Palghat District	10°24'38"N & 76°45'51"E	-	-	Cited by Islam & Rahmani (2004)
Peechi-Vazhani WS, Thrissur District	10°36'45"N & 76°24'25"E	-	Recorded by Easa (1991) and Nameer (2000)	Cited by Islam & Rahmani (2004)
Periyar WS, Idukki District	9°26'43"N & 77°14'52"E	-	-	Cited by Islam & Rahmani (2004)
Shendurney WS, Kollam District	8°59'18"N & 77°08'18"E	-	-	Cited by Islam & Rahmani (2004)
Silent Valley NP, Palakkad District	11°07'54"N & 76°25'47"E	-	-	Cited by Islam & Rahmani (2004)
Kottiyoor Reserved Forest, slopes of Brahmagiris, Kannur District	11°51'- 11°55"N & 75°32'- 75°57'E	--	Birds recorded	Sashikumar (2003)
Thattakkad-Munnar forest road	--	July 2003	No positive sightings	Kumar (2004)
Paripputhodu, Aralam WS, Kannur District	--	10–13.iii.2005	Birds sighted	Sashikumar & Palot (2005)
Palakuzi, Peechi-Vazhani WS, Trichur forest division, Southern WG	10°28'- 10°40"N & 76°17'- 76°28'E	February 1991	Birds sighted by R. J. R. Daniels	Santharam (2006)
Pakuthippalam, Anamalai-Palani Hills, Southern WG, Chittur taluk, Palakkad District	10°20'- 10°48"N & 76°30'- 76°55'E	December 2004 to February 2005	Two birds responded to tape recorded calls.	Nameer (2006); Nameer & Praveen (2006); Praveen & Nameer (2007)
Siruvani and Muthikulam Hills, Part of Palghat hills, Mannarkad taluk, Palakkad District	10°56'- 11°04"N & 76°37'- 76°41'E	10.ii.2007	Call recorded at Kuramvampady base camp	Praveen & Nameer (2008)
Mullakudi, Periyar TR, Idukki District.	09°32"N & 77°13'E	1–4.ii.2008	Single	Nameer & Praveen (2008)
Goodrickal, Periyar WS	09°32"N & 77°13'E	--	Single	Mudappa & Raman (2008)
Idamalar and Thattakkad	--	May 2010	Birds sighted by Ginu George and others	Praveen (2010)
Thattakkad Bird Sanctuary and Malayapoor reserve forest, south of Palghat, Southern WG	10°10'- 10°15"N & 76°55'- 76°58'E	--	Bird density 0.13	Sidhu et al. (2011)
Parappa Reserve Forest, Kasaragod District.	--	12.ii.2007	By Jafer	Sashikumar et al. (2011)

Locality	Co-ordinates	Date	General observations	Reference/Source
Periya, Wayanaad District	11°50'10.2"N 75°51'23.2"E	3.ix.2003	By Shyamal	Sashikumar et al. (2011)
Kakkayam Reserve Forest, Kozhikode District	--	-	By Jafer	Sashikumar et al. (2011)
Nilambur Reserve Forest, Malappuram District	--	During or before 1993	By Nameer	Sashikumar et al. (2011)
Silent Valley NP	--	During or before 1993	By Bashir and Nameer	Sashikumar et al. (2011)
Walayar, Palakkad District		27.iii.1995	By Praveen and others	Sashikumar et al. (2011)
Nelliampathy, Palakkad District	10°32'06.9"N 76°41'36.6"E	During or before 2006	By Nameer and Praveen	Sashikumar et al. (2011)
Chimmony WS, Thrissur District	10°28'56.6754"N & 76°29'3.1164"E	During or before 1992	By P.O. Nameer	Sashikumar et al. (2011)
Idamalayar, Ernakulam District	--	-	By Eldhose	Sashikumar et al. (2011)
Arippa, bordering Trivandrum and Kollam districts	--	Early 1990s	By Manoj and Raghu	Sashikumar et al. (2011)
Valayanchal Rest House, Aralam WS, Kannur District	--	-	A pair used to roost in a highly disturbed patch of forest edge.	Sashikumar et al. (2011)
Thattekad Bird Sanctuary	--	January to December 2009	Bird sighted	Sashikumar et al. (2014)
Marayur, Karupadna, Adivad- Oonnukal Road, Ernakulam District	10°1'45.4332"N & 76°40'25.0566"E	10.i.2004	Single	eBird Basic Dataset(2015)
Dr. Salim Ali Bird Sanctuary and surrounding area,Thattekad, Ernakulam District	10°6'2.5122"- 10°7'52.0206"N & 76°39'0.8568"- 76°42'21.6612"E	F 2007; J 2008; My 2010; Ap,N 2011; D 2012; N 2013; My,S,N,D 2014; F 2012	Singles, Pairs and Three	By 22 contributors eBird Basic Dataset(2015)
Thattekad Bird Sanctuary, Idukki District	10°7'52.0206"N & 76°42'21.6612"E	Au 2003; O 2004; Mr 2007; F,O,D 2008; S 2009; N 2010; D 2011; J,D 2012; F 2013;F, N 2014	Males, Females, Pairs and Juveniles	By 18 contributors Oriental Bird Images (2015)
Dr. Salim Ali Bird Sanctuary and surrounding area,Thattekad, Idukki District	10°7'30.288"- 10°10'3.1116"N & 76°41'20.2122"- 76°46'18.0798"E	D 2004; F,Ap,D 2007; F 2008; J,S 2009; F,S,N 2011; J,Ju,D 2012; J,F,My,D 2013; J,F,Mr,My,S,O,N,D 2014; J,F 2015	Singles, Pairs and Three	By 85 contributors eBird Basic Dataset(2015)
Eravikulam NP, Idukki District	10°4'43.2834"N & 77°3'48.4122"E	20.i.2014	Pair	eBird Basic Dataset (2015)
Periyar TR and Mullakudi area, Idukki District	9°32'24.543"N & 77°13'45.1518"E	02.ii.2008	Single	eBird Basic Dataset (2015)
Periyar TR, Idukki District	9°34'34.953"N & 77°10'49.1808"E	19.i.2014	Single	eBird Basic Dataset (2015)
Urulanthanni, Idukki District	10°7'29.4738"N & 76°45'29.9946"E	24.viii.2012	Pair	eBird Basic Dataset (2015)
Malayattur Division—Idamalayar, Idukki District	10°11'13.974"N & 76°42'41.7852"E	12.ii.2011	Single	eBird Basic Dataset (2015)
Forest above Kuttampuzha, Idukki District	10°7'22.2132"N & 76°45'58.1472"E	03.i.2015	Single, Pair	eBird Basic Dataset (2015)
Kuttampuzha, Idukki District	10°7'22.2132"N & 76°45'58.1472"E	09.iii.2012	Female with Juvenile	Oriental Bird Images (2015)
Wallardie, Idukki District	9°35'4.0524"N & 77°6'47.5302"E	14.ii.2014	Single	eBird Basic Dataset (2015)
Rockwood, Shendurny WS, Kollam District	8°54'6.3966"N & 77°5'54.5604"E	21.ii.2014	Single	eBird Basic Dataset (2015)
Arippa Ammayambalam Pacha Forests, bordering Trivandrum (now Thiruvananthapuram) and Kollam districts	8°50'24.05"N & 77°1'49.69"E	28.vii.2014	Pair	Oriental Bird Images (2015)

Locality	Co-ordinates	Date	General observations	Reference/Source
Aralam WS, Kannur District	11°57'8.028"N & 75°49'4.8858"E	15.ix.2005	Pair	Oriental Bird Images (2015)
Aralam WS and Kottiyoor area, Kannur District	11°57'8.028"N & 75°49'4.8858"E	17.ix.2005 and 14.iii.2009	Single	eBird Basic Dataset (2015)
Kakkayam Reservoir, Forest Guesthouse and Malabar WS, Kozhikode District	11°33'17.949"N & 75°55'8.634"E	21.iii.2014 and 14.ii.2015	Single, upto Five	eBird Basic Dataset (2015)
Nilambur South Division—Kariri, Malappuram District	11°16'10.6896"N & 76°22'1.4196"E	27.xii.2008	Single	eBird Basic Dataset (2015)
Nilambur North Division—Bhoodanam, Malappuram District	11°25'0.3504"N & 76°13'16.521"E	27.xii.2008	Single	eBird Basic Dataset (2015)
Silent Valley NP-Sairandhry, Palakkad District	11°5'40.7436"N & 76°26'53.0304"E	10.iii.2006 and 09.xii.2006	Eleven and Single	eBird Basic Dataset (2015)
Silent Valley NP--Anavai – Hawlock Palakkad District	11°7'27.588"N & 76°30'47.6994"E	02.iv.2011	Single	eBird Basic Dataset (2015)
Siruvani Reserve Forest—Kuravampady, Palakkad District	11°0'40.6692"N & 76°38'53.9052"E	12.ii.2007	Single	eBird Basic Dataset (2015)
Goodrickal Reserved Forest, Pathanamthitta District	9°27'14.6874"N & 77°7'49.1154"E	03.iv.2006	Single	eBird Basic Dataset (2015)
Chimmony WS—Mangalamkavu, Thrissur District	10°28'56.6754"N & 76°29'3.1164"E	12.xi.2006	Pair	eBird Basic Dataset (2015)
Vazhachal Forest Division--Kundur Medu, Thrissur District	10°19'55.6716"N & 76°36'10.5294"E	23.ii.2008	Single	eBird Basic Dataset (2015)
Varayampara Camp, Thrissur District	10°35'43.6194"N & 76°21'39.0234"E	30.xi.2014	Pair	eBird Basic Dataset (2015)
Neyyar WS—Kombai, Thiruvananthapuram District	8°32'39.8394"N & 77°12'0"E	25.xii.2010	Single	eBird Basic Dataset (2015)
North Wayanad FD—Periya, Wayanad District	11°46'47.3268"N & 75°50'47.1624"E	20.xii.2003	Single	eBird Basic Dataset (2015)
North Wayanad, Wayanad District	11°46'47.3268"N & 75°58'8.3208"E	01.x.2006	Three Females	Oriental Bird Images (2015)
Malabar WS, Wayanad District	11°33'57.9672"N & 75°58'8.3208"E	22.iii.2014	Pair	eBird Basic Dataset(2015)
Periyar National Park, Idukki District	9°34'42.8154"N & 77°10'47.7474"E	25.xi.2010	- recorded on naturgucker	GBIF.org (2016)
Near Thattekad, Idukki District	10°6'17.8914"N & 76°42'23.04"E	02.v.2010	Recorded on iNaturalist	GBIF.org (2016)
Near Thattekad, Idukki District	10°7'28.308"N & 76°40'45.876"E	28.viii.2011	-do-	GBIF.org (2016)
Thenmala Reserve Forest, Kollam District	9°1'12.1794"N & 77°8'13.4514"E	08.iii.2014	-do-	GBIF.org (2016)
<b>Tamil Nadu</b>				
Vanathiparai, Madurai District	----	25–27.ii.1986	One adult male and One adult female	In collection of ZSI, Kolkatta, Regd. No. 40201and 40211 (as cited by Dutta 2009)
Bana Thirtham, Tirunelveli District	08°41'14.5"N & 77°18'51.1"E	17.ix.1992	Adult Male	In collection of ZSI, Kolkatta, Regd. No. 39128 (as cited by Dutta 2009)
Karian Shola, one km from Top Slip, Anaimalai hills, Indira Gandhi WS, Coimbatore District	10°28"N & 76°51'E	December 1991 to February 1993	Three	Kannan (1993, 1994a, 1998)
Varagaliar Shola, 24kms from Top Slip, Anaimalai hills, Indira Gandhi WS, Coimbatore District	10°26'50.50"N & 76°51'49.30"E	-do-	Pair	Kannan (1993, 1994a, 1998)
Seechali, 10Kms from Top Slip, Anaimalai hills, Indira Gandhi WS, Coimbatore District	10°28'4.31"N & 76°50'1.94"E	-do-	Pair	Kannan (1993, 1994a, 1998)

Locality	Co-ordinates	Date	General observations	Reference/Source
Kalakkad Mundanthurai TR, Ashambu hills of Agasthyarmalai, southern WG	08°24'- 08°50"N & 75°16'- 77°40'E	--	Birds recorded	Johnsingh (2001)
Indira Gandhi WS and NP, Coimbatore District	10°26'50.50"N & 76°51'49.30"E		Breeds in Kariyan-Shola. Recorded by Sivakumaran & Rahmani (2002).	Cited by Islam & Rahmani (2004)
Tirunneveli Reserve Forest, Kanyakumari and Tirunneveli District	8°35'02"N & 77°17'57"E	-	-	Cited by Islam & Rahmani (2004)
Ghat road, Sirumalai	--	--	One male hit by Jeep	Swami (2006)
Ghat road, Sirumalai	--	In 2006	Recorded by Swami	Bundell (2010)
Sholai School and Kodaikanal (Palani Hills)	--	28.v.2007	Calls heard but as per author needs verification.	Santharam (2010)
Mahendragiri Hill RF, Kanyakumari District	8°19'50.3"N & 77°33'17.4"E	February 2004	Nest with one chick by Jafer and Sathyan	Sashikumar et al (2011)
Mudumalai TR	--	--	Bird sighted	Shravankumar et al. (2012)
Kalakkad Mundanthurai TR, Tirunneveli District	8°37'42.9276"N & 77°17'44.0514"E	16.ii.2013 and 16.xii.2013	Single	eBird Basic Dataset (2015)
Zamin singam patti, Tirunneveli District	8°39'31.2078"N & 77°26'5.6466"E	25.i.2015	Single	eBird Basic Dataset (2015)
Karukurichi, Tirunneveli District	8°41'17.8146"N & 77°32'14.5824"E	25.i.2015	Single	eBird Basic Dataset (2015)
Rajapalayam Water Reservoir, Virudunagar District	9°29'31.8978"N & 77°28'38.9064"E	24.i.2015	Single	eBird Basic Dataset (2015)
Narakadu, Kanyakumari District	8°27'46.3098"N & 77°27'53.7948"E	25.i.2015	Three	eBird Basic Dataset (2015)
Indira Gandhi WS and NP, Tiruppur District	10°25'17.8962"N & 77°7'33.8982"E	08.iii.1993	Pair	eBird Basic Dataset (2015)
Anamalai TR—Topslip, Coimbatore District	10°28'12.3168"N & 76°50'38.7132"E	11.x.2004, 12.i.2005 and 11.i.2007	Single, Three and Single	eBird Basic Dataset (2015)
Karian Shola, Top Slip, Anamalais, Coimbatore District	10°28'12.3168"N & 76°51'38.7112"E	My, Ju, O 2005	Females and Pair	Oriental Bird Images (2015)
Upper Cumbum Valley, Vannathiparai, Madurai District	-	25.ii.1986	One male and one female (collected by Bruce Beehler) in USNM	GBIF.org (2016)
<b>Karnataka</b>				
Aushi, Nilknnd, Kutgul and Gairosppa, North Kanara (now Uttar Kannada) District	--	During or before 1898	Wailing cry of number of birds and sighted two birds and killed one.	Davidson(1898)
Karwar, North Kanara (now Uttar Kannada) District	14°53'29.9"N & 74°23'00.8"E	Before 1927	Nest, eggs and nestling	Collected by T. R. Bell as cited by Baker(1927 and 1934)
Londa neighbourhood, North Kanara (now Uttar Kannada)	--	1938	No sightings	Koelz(1942)
Mysore	--	Before 1942-43	No sightings	Ali (1942-43)
Santgal and North Kanara (now Uttar Kannada)	--	--	Two specimens in collections of BNHS, Mumbai	Abdulali (1972)
Jog Falls, Shimoga District	14°13'46.1"N & 74°48'44.7"E	15 and 21.i.1977	One adult male and One adult female	In collection of ZSI, Kolkatta, Regd. No. 40207 and 40208 (as cited by Dutta 2009)
Sampaje, Coorg, Kodagu District	12°29'45.1"N & 75°33'17.4"E	03.ii.1977	Sub-adult male	In collection of ZSI, Kolkatta, Regd. No. 40209 (as cited by Dutta 2009)
Kumta Reserve Forest, North Kanara (now Uttar Kannada) District	14°26'19.93"N & 74°26'24.79"E	07.x.1983 and 10.x.1984	Female	Daniels (1984 and 1986)
Magod, Yellapur taluka, Uttara Kannada District	14°13'10.41"N & 74°35'29.88"E	12.ii.1985	Female	Borges (1986)
Kudremukh NP	--	--	Birds recorded	Hussain (2003)



Locality	Co-ordinates	Date	General observations	Reference/Source
Kemmangundi, Bababudan Hills adjacent to Bhadra TR, Chikmagalur District	13°33'N'-75°45'E	25-27.v.2002	Two males and one female roosting	Thejaswi (2004).
Brahmagiri-Makut area in WG	12°55'-12°13"N & 75°50'-76°03'E	23.xi.2001 and 30.i.2002	Ten	Kumara & Singh (2006)
Pushpagiri-Bisale area in WG	12°34'-12°52"N & 75°38'-75°42'E	14.v.2003 to 05.vi.2003	Twenty two	Kumara & Singh (2006)
Sirsi-Honnava area in WG	14°15'-14°25"N & 74°35'-74°47'E	15.ii.2002 to 23.iv.2002	No sightings	Kumara & Singh (2006)
Bhimgad and Castle Rock, Belgaum and North Kanara District (now Uttara Kannada)	15°32'34"N & 74°18'26"E	-	-	Cited by Islam & Rahmani (2004)
Brahmagiri WS, Kodagu District	12°16'30"N & 75°45'12"E	-	-	Cited by Islam & Rahmani (2004)
Kemmangundi and Bababudan Hills, Chikmagalur District	13°28'60"N & 75°44'00"E	-	-	Cited by Islam & Rahmani (2004)
Kudremukh NP, Chikmagalur District	13°21'02"N & 75°18'27"E	-	-	Cited by Islam & Rahmani (2004)
Pushpagiri WS, Kodagu and Dakshin Kannada District	12°35'30"N & 75°40'00"E	-	-	Cited by Islam & Rahmani (2004)
Anshi National Park, Uttar Kannada District	15°03'59"N & 74°25'20"E	-	-	Cited by Islam & Rahmani (2004)
Kerekatte area, Kudremukh NP, Chikmagalur District	-	-	Fairly common. October 2005	Palot (2007)
Anshi National Park, Uttar Kannada District	15°03'59"N & 74°25'20"E	-	Single	Mudappa & Raman (2008)
Mookambika WS, Udupi District	13°50'4.6314"N & 74°48'36.8994"E	-	Single	Mudappa & Raman (2008)
Someshwara WS, Udupi District	13°28'23"N & 75°03'04"E	-	Single	Mudappa & Raman (2008)
Kogar Ghat near Bacchodi village, outskirts of Sharavathy WS, Udupi District	14.09°N, 74.68°E	20.iii.2009	Single	Barve (2010)
Sharavathy WS and valley, central WG	14°6'17.22"N & 74°59'13.09"E	--	Single bird	Barve & Warriar (2013)
Virajpet, Kodagu District	12°12'4.9134"N & 75°48'18.2268"E	05.iii.2011	Four	eBird Basic Dataset (2015)
Coorg, Kodagu District	12°6'45.3024"N & 75°54'12.7512"E	27.xi.2011 and 10.i.2012	Male and Pair	Oriental Bird Images (2015)
Coorg, Kodagu District	12°6'45.3024"N & 75°54'12.7512"E	23.i.2013	Four	eBird Basic Dataset (2015)
Ponnampet, Coorg, Kodagu District	12°8'14.4522"N & 75°54'16.9668"E	04.iii.2013	Pair	eBird Basic Dataset (2015)
Hudikeri, South Coorg, Kodagu District	12°4'57.4752"N & 75°55'23.397"E	03.ii.2015	Pair	eBird Basic Dataset (2015)
Kumbri, Sringeri, Chikmagalur District	13°26'38.6736"N & 75°15'22.737"E	29.iii.2014	Single	eBird Basic Dataset (2015)
Durga Village and Forest, Karkala, Udupi District	13°13'44.1762"N & 75°1'31.2024"E	01.i.2006, 26.viii.2012, 02.ii.2013 and 17.xi.2013	Single, Pair, Five and Pair	eBird Basic Dataset (2015)
Durga Reserve Forest, Karkala, Udupi District	13°13'44.1762"N & 75°1'31.2024"E	01.v.2011, 15.iv.2012 and 26.viii.2012	Male, Female and Female	Oriental Bird Images (2015)
Someshwara WS, Udupi District	13°29'2.5794"N & 75°0'20.196"E	09.v.2006	Single	eBird Basic Dataset (2015)
Mookambika WS, Udupi District	13°50'4.6314"N & 74°48'36.8994"E	10.v.2006	Single	eBird Basic Dataset (2015)
Pervaje Road, Karkala, Udupi District	13°13'16.0458"N & 74°59'55.5714"E	24.v.2014	Single	eBird Basic Dataset (2015)

Locality	Co-ordinates	Date	General observations	Reference/Source
Herga Temple Road, Herga, Udipi District	13°22'15.3114"N & 74°48'5.364"E	N, D 2014; J, F 2015	Singles, Pairs and sometimes Seven	By 14 contributors, eBird Basic Dataset(2015)
Marne, Peranankila - Gundupade Road, Udipi District	13°17'35.16"N & 74°50'8.052"E	07.xii.2014	Single	eBird Basic Dataset (2015)
Golikatte Road, Herga, Udupi District	13°22'19.8048"N & 74°48'34.8264"E	10.xii.2014	Pair	eBird Basic Dataset (2015)
Pragathi Nagar, Udupi District	13°18'23.9796"N & 74°47'55.053"E	28.i.2015	Single	eBird Basic Dataset (2015)
Manipal Lake, Udupi District	13°20'30.7854"N & 74°47'10.9752"E	01.ii.2015	Pair	eBird Basic Dataset (2015)
Manipal, Udupi District	13°20'30.7854"N & 74°47'10.9752"E	23.xi.2014 and 09.xii.2014	One male and a male with one chick on nest	Oriental Bird Images (2015)
Agumbe Rainforest Research Station, Agumbe, Shimoga District	13°31'7.6296"N & 75°5'24.9756"E	12.xi.2010 and 08.i.2015	Single, Four	eBird Basic Dataset (2015)
Anshi NP, Uttar Kannada District	14°57'2.052"N & 74°22'20.496"E	18.iv.2005 and 12.x.2005	Singles	eBird Basic Dataset (2015)
Old Magazine House, Ganeshgudi, Uttar Kannada District	15°17'32.499"N & 74°31'14.109"E	26.x.2013	Single	eBird Basic Dataset (2015)
Kaiga township, Uttar Kannada District	14°54'2.2644"N & 74°20'19.0494"E	11.i.2014	Pair	eBird Basic Dataset (2015)
<b>Goa</b>				
Goa (as whole)	--	1974 to 1994	No sightings	Grubh & Ali(1976); Abdulali(1980); Rane(1983); Saha & Dasgupta(1992); Lainer(1999)
Bondla WS, North Goa District	15°26'30.66"N & 74°6'22.2258"E	(1) February 1996 (2) between 1996 and 2000	i) two birds-first reported by Holt ii)Others by voice record	as cited by Lainer (2004); Mahabal & Patil (2008)
Bondla WS, North Goa District	15°26'30.66"N & 74°6'22.2258"E	-	Single	Mudappa & Raman (2008)
Backwoods Camp and Natures Nest, South Goa	---	2012	Three pairs and eight pairs (by P. Lad).	as cited by Lainer & Alvares (2013)
Backwoods Camp and Tambdi Surla area, South Goa District	15°26'35.721"N & 74°14'35.2176"E	D 2001; J,F,Mr 2002; J 2003; O 2008; F 2009; J 2011; F, Ap 2012; J,F,D 2013; F, My, N, D 2014	Singles, Pairs, upto Four	By 22 contributors eBird Basic Dataset(2015)
Camp Tambdi Surla, South Goa District	15°26'35.721"N & 74°14'35.2176"E	18.x.2013 and 30.iv.2014	Single male and Pair	Oriental Bird Images (2015)
Bhagwan Mahaveer WS and Mollem NP, South Goa	15°20'24.291"N & 74°15'52.1568"E	D 2003; O 2007; F,Ap 2009; O 2010; J,Au 2011; J 2013; J 2014	Singles, Pairs and Three	By 9 contributors eBird Basic Dataset(2015)
Bhagwan Mahaveer WS and Mollem NP, South Goa	15°20'24.291"N & 74°15'52.1568"E	12.iii.2015 and 03.ii.2002	Single male and Pair	Oriental Bird Images (2015)
Natures Nest, South Goa	15°24'39.5856"N & 74°12'0.4134"E	28.ix.2014 and 15.ii.2015	Singles	eBird Basic Dataset (2015)
Netravali WS, South Goa	15°7'9.0942"N & 74°15'10.7532"E	23.ix.2014	Pair	eBird Basic Dataset (2015)
Cotigao WS, South Goa	14°58'33.8694"N & 74°12'22.2762"E	07.i.2015	Pair	eBird Basic Dataset (2015)
Near Conquirem Shivade, South Goa	15°24'36.3882"N & 74°8'19.5462"E	10.i.2007	Single	eBird Basic Dataset (2015)
Bondla WS, North Goa District	15°26'30.66"N & 74°6'22.2258"E	12.ii.2004 and 08.ii.2005	Singles and Pair	By 4 contributors eBird Basic Dataset (2015)
Mhadei WS- Chorla Ghat Section, North Goa District	15°36'54.363"N & 74°6'44.6256"E	29.i.2015	Single	eBird Basic Dataset (2015)
Bhagwan Mahaveer WS and Mollem NP, South Goa	15°22'33.2394"N & 74°12'39.348"E	26.xii.2006	On naturgucker	GBIF.org (2016)

Locality	Co-ordinates	Date	General observations	Reference/Source
<b>Maharashtra</b>				
Khandala, Mahabaleshwar, Belgau along Sahyadri Mountains(WG)	--	1875–1876	No Sightings	Fairbank (1876)
South Konkan (Ratnagiri, Sindhudurg districts)	--	--	No Sightings	Vidal (1880)
Bombay Presidency (Maharashtra)	--	--	No Sightings	Barnes (1885)
Radhanagari WS, Kolhapur District	16°24'54.53"N & 73°57'37.36"E	21.ix.1998	Female with Chick	Giri (2002)
Radhanagari WS, Kolhapur District	16°24'54.53"N & 73°57'37.36"E	21.ix.1998	Reported by Giri(2002)	Cited by Prasad (2003 and 2006); Islam & Rahmani (2004); Mahabal et al. (2014).
Phansad WS, near Alibaug, Raigad District	18°25'47"N & 72°56'20"E	May 2009	Reported by Adesh Shivkar and others	Cited by Prashanth (2009)
Phansad WS, near Alibaug, Raigad District	18°25'47"N & 72°56'20"E	2009	Single (with photo by Vaibhav Deshmukh)	Kasambe (2012)
Sanjay Gandhi NP, Mumbai	19°18'35"N & 72°57'48"E	12.iii.2011 to 19.iii.2011	Single, Three calling	Kasambe (2012)
Phansad WS, Raigad District	18°25'47"N & 72°56'20"E	27.x.2012 and 18.v.2013	Females	Oriental Bird Images (2015)
Near Alibaug, Raigad District	18°33'28.36"N & 72°56'22.27"E	16.iii.2012 and 06.v.2010	Females	Oriental Bird Images (2015)
Wilderness Resort, Sindhudurg District	15°39'10.2126"N & 74°7'0.5586"E	07.iii.2014	Single	eBird Basic Dataset (2015)
Amboli, Sindhudurg District	15°57'36"N & 73°59'57"E	21.vii.2014	Four	Sayyed & Mahabal (2016)
Devrukh, Ratnagiri District	17°2'54"N & 73°38'45"E	01.iv.2015	Two	Sayyed & Mahabal (2016)
Chandoli, Sangli District	17°11'30" N, 73°46'30" E	12.iii.2015	Five pairs calling, Four	Sayyed & Mahabal (2016)
Maldev Koyna, Satara District	17°46'48"N & 73°42'2"E	17.iii.2015	Two pairs calling	Sayyed & Mahabal (2016)
Chalkewadi, Satara District	17°35'18 "N & 73°48'43"E	23.iii.2015	No sightings	Sayyed & Mahabal (2016)
Kaas, Satara District	17°42'53"N & 73°48'11"E	21.iii.2015	Two	Sayyed & Mahabal (2016)
Satara city, Satara District	17°41'13"N & 73°59'52"E	05.iii.2015	Single, Pair	Sayyed & Mahabal (2016)
Mahabaleshwer, Satara District	17°54'57"N & 73°39'57"E	15.iii.2015	Six birds	Sayyed & Mahabal (2016)
Mulshi, Pune District	18°28'17"N & 73°29'19 "E	29.iii.2015	No sightings	Sayyed & Mahabal (2016)
Bhira, Raigad District	18°27'13"N & 73°23'17"E	30.iii.2015	Four	Sayyed & Mahabal (2016)
Chavani village, Raigad District	18°42'35.15"N & 73°20'20.07"E	14.iii.2000	Two pairs calling	Sayyed & Mahabal (2016)
<b>State: Unknown</b>				
Exact locality not given. Collection from India	---	1874–1915	All museum specimens in NHMUK	GBIF.org (2016)

**Abbreviations:** J - January, F - February, Mr - March, Ap - April, My - May, Ju - June, Jy - July, Au - August, S - September, O - October, N - November, D - December; NP - National Park, TR - Tiger Reserve, WG - Western Ghats, WS - Wildlife Sanctuary; BNHS - Bombay Natural History Society, Mumbai; MCZ - Museum of Comparative Zoology, Harvard University, USA; NHMUK - Natural History Museum, UK; USNM - Smithsonian National Museum of Natural History, USA; ZSI - Zoological Survey of India.

## CONCLUSION

The earlier northernmost distribution range of the Sri Lanka Frogmouth was up to Uttar Kannada, Karnataka starting with the records from around 1898 (Davidson 1898). The recent records such as the one by Holt in Bondla Wildlife Sanctuary, North Goa District, in 1996 (Lainer 2004) extended the range further northwards to Goa. The continued northward movement of the bird into the state of Maharashtra was recorded in Radhanagari Wildlife Sanctuary, Kolhapur District in 1998 (Giri 2002), Phansad Wildlife Sanctuary, Raigad District in 2009 (Prashanth 2009; Kasambe 2012) and Sanjay Gandhi National Park near Mumbai in 2011 (Kasambe 2012). Further, Kasambe (2012) speculated whether it extends till the Dang District in Gujarat where the Western Ghats culminates. There is one record of Hodgson's Frogmouth (*Batrachostomus hodgsoni*) (Pilo et al. 1996) from Shoolpaneshwar Wildlife Sanctuary in Gujarat but not that of Sri Lanka Frogmouth. This record however seems doubtful and requires further corroboration.

Until 2000 the observation records of the Sri Lanka Frogmouth were patchy and there were huge gaps in their distribution range along the Western Ghats. Now many gaps have been filled up because of the recent records and hence, it shows a more or less continuous distribution in the various states (particularly in Kerala and Goa) (Fig. 2). Some gaps still remain (can be viewed at <https://goo.gl/5KU9lw>) which need to be surveyed properly for presence of the Sri Lanka Frogmouth, if any, in the states given below. Some of these gaps exist possibly because of unsuitable forest habitats, agricultural lands, tea estates, urbanization etc. resulting in less possibility of their occurrence.

### State-wise distribution gaps:

#### Kerala

i. Between north of Thenmala, Kollam District to Thrivani, Pathanamthitta District an aerial gap of about 40km particularly around Rani Forest Division, Thannithodu, and Aruvappulam.

ii. Between Eravikulam National Park and Wallardie, Idukki District an aerial gap of about 55km particularly around Devikulam, Kannathadu, Idukki Wildlife Sanctuary, Cardomom Hills and Ayyappacoil.

iii. Palakkad - a natural gap in the Western Ghats.

#### Tamil Nadu

iv. Western parts of Theni and Dindigul districts,

although falling in the Western Ghats particularly the Palni Hills including Kallar Reserve Forest, Kodaikanal, Poombarai and Kookal.

#### Karnataka

v. Between Sampaje and Virajpet, Kodagu District an aerial gap of about 40km, particularly around the Greater Talacauvery National Park, Madikeri, Bettaphur, Nelaji, Naladi.

vi. Between Karkala, Udupi District and Pushpagiri-Bisale area in Western Ghats an aerial gap of about 80km particularly around Mullodi, Kottigehara, Dharmasthala, Byrapura Estate.

vii. Between Sharavathy Wildlife Sanctuary and Someshwara Wildlife Sanctuary, Udupi District an aerial gap of about 60km particularly around Hosanagar, Mookambika Wildlife Sanctuary, Hulikal and around Mani Reservoir.

viii. Between Karwar and Kumta, Uttar Kannada District an aerial gap of about 50km particularly around Gule, Adlur, Achave, Yana, Ramanguli, Kemmani.

ix. Some parts of the districts such as Mysore, Hassan, Dakshina Kannada, Dharwad and Belgaum falling in the Western Ghats range.

#### Goa

x. More or less continuous distribution in the state with no major gaps.

#### Maharashtra

xi. Between Amboli and Viridi, Sindhudurg District an aerial gap of about 35km particularly around Udeli, Pargad, Dodamarg, Sada and around Tilari Dam.

xii. Between Radhanagari Wildlife Sanctuary, Kolhapur District and Amboli, Sindhudurg District an aerial gap of about 50km particularly around Dudhganga Reservoir, Natal, Pangrad, Gotvewadi and around Patgaon Reservoir.

xiii. Between Devrukh, Ratnagiri District and Radhanagari, Kolhapur District an aerial gap of about 80km particularly around Sakharpa, Vishalgad, Barki and Gaganbawda.

xiv. Between Kaas, Satara District and Chandoli, Sangli District an aerial gap of about 60km particularly around Koyna Reservoir, Nawaja, Chandel and around Dikshi Reservoir.

xv. Between Bhira, Raigad District and Mahabaleshwar, Satara District an aerial gap of about 65km particularly around Ghol, Raigad Fort Natural Reserve, Bhirwadi, Adawale etc.

xvi. Between Chavani and Bhira, Raigad District,



a gap of 30km particularly around Amnori, Bhalgul, Thanale, Ghera Sudhagad.

xvii. Around Lonavala- Khandala belt, Bhimashankar Wildlife Sanctuary, Ambavane, Saltar, Telbaila, Nagshet (Pune District) and Karnala Bird Sanctuary, Matheran (Raigad District).

The surveys are needed to verify the presence of Sri Lanka Frogmouth in the above mentioned state-wise distribution gaps. Besides, the following regions on the eastern side of the Western Ghats should be surveyed as well:

1. In Tamil Nadu the bird has been observed in the Sirumalai mountains, but there are no records in the intermediate zone between these mountains and the Western Ghats.

2. The mountainous region consisting of Nilgiri mountains, forests of Satyamangalam, Biligiriranga (BR) Hills and Melagiri hills falling in the Tamil Nadu and Karnataka states.

3. The three large national parks of Mudumalai (Tamil Nadu), Bandipur and Nagarhole (both in Karnataka) have no records of the bird.

4. Parts of Thane and Nasik districts of Maharashtra and Dang District, Gujarat falling in the Western Ghats, to check any further northward occurrence of the frogmouth beyond Mumbai.

Karant (2003) discussed the evolution of disjunct distributions among some wet-zone species including genus *Batrachostomus* (also referred by Ripley 1949) of the Indian subcontinent by testing various hypotheses using a phylogenetic approach. He pointed out that distribution data should be well-documented throughout India for studying such species. This communication is the first step in this context.

Datta (2009) on the basis of collection proposed that the population, particularly in the southern Western Ghats strip between Jog falls, Shimoga District and Kodagu District, Karnataka as being *Batrachostomus moniliger roonwali*, a new subspecies, whereas distribution of *B. m. moniliger*, a nominate subspecies, would be from Madurai District to Tirunelveli District of Tamil Nadu, except the zone from Kodagu south to Madurai being the intergrading zone of two populations. This proposition hasn't found a wide acceptance. Rasmussen & Anderton (2012) have pointed out that although taxonomically considered the same race, the Sri Lankan and Western Ghats birds differ slightly in bill size, tail length, plumage tone and possibly vocalisations, but need further studies.

Hence, keeping in view, the above work and the

present extended range of Sri Lanka Frogmouth, further northwards up to Mumbai (Maharashtra), it needs a detailed taxonomic as well as molecular phylogenetic studies of different populations present in the entire region of the Western Ghats of India.

For the birdwatchers/researchers, we suggest that, in addition to sightings, they should try to hear the calls (<http://www.xeno-canto.org/species/Batrachostomus-moniliger>) typically given in the early mornings/evenings/nights to identify the presence of the Sri Lanka Frogmouth in the area.

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