

Streaked Wren Babbler <i>Turdinus brevicaudatus</i>
Nepal Tit Babbler <i>Alcippe nipalensis</i>
Spot-breasted Laughing-thrush <i>Garrulax merulinus</i>
White-crested Laughing-thrush <i>G. leucolophus</i>
Blue-winged Laughing-thrush <i>Trochalopteron squamatum</i>
Chestnut-crowned Laughing-thrush <i>T. erythrocephalum</i>
Grey Sibia <i>Heterophasia gracilis</i>
Silver-eared Mesia <i>Leiothrix argentauris</i>
Rufous-backed Sibia <i>Leioptila annectens</i>
Red-faced Liocichla <i>Liocichla phoenicea</i>
Streak-throated Barwing <i>Sibia waldeni</i>
Blue-winged Minla <i>Siva cyanouroptera</i>
Rusty-fronted Barwing <i>Actinodura egertoni</i>
Beautiful Nuthatch <i>Sitta formosa</i>

Chestnut-tailed Starling <i>Sturnia malabarica</i>
Common Myna <i>Acridotheres tristis</i>
Oriental Magpie Robin <i>Copsychus saularis</i>
White-rumped Shama <i>Kittacinda malabarica</i>
Pale-chinned Blue Flycatcher <i>Cyornis poliogenys</i>
Rufous-bellied Niltava <i>Niltava sundara</i>
Lesser Shortwing <i>Brachypteryx leucophris</i>
White-tailed Robin <i>Myiomela leucura</i>
Golden Bush Robin <i>Tarsiger chrysaeus</i>
Taiga Flycatcher <i>Ficedula albicilla</i>
Snowy-browed Flycatcher <i>F. hyperythra</i>
Rufous-gorgetted Flycatcher <i>F. strophitata</i>
Sapphire Flycatcher <i>F. sapphira</i>
Purple Cochoa <i>Cochoa purpurea</i>

Lesser Florican *Sypheotides indica* in Warora (Chandrapur, Maharashtra, India): Conservation requirements

Sujit S. Narwade, Vithoba Hegde, Vipin V. Fulzele, Bandu T. Lalsare & Asad R. Rahmani

Narwade, S. S., Hegde, V., Fulzele, V. V., Lalsare, B. T., & Rahmani, A. R., 2015. Lesser Florican *Sypheotides indica* in Warora (Chandrapur, Maharashtra, India): Conservation requirements. *Indian BIRDS* 10 (2): 50–52.

Sujit S. Narwade, Project Scientist, Bharat Natural History Society (BNHS-India), Hornbill House, Shaheed Bhagat Singh Road, Mumbai 400001, Maharashtra, India. E-mail: sujitsnarwade@gmail.com. [Corresponding author]

Vithoba Hegde, Senior Field Assistant, Collection Department, Bharat Natural History Society (BNHS-India), Hornbill House, Shaheed Bhagat Singh Road, Mumbai 400001, Maharashtra, India.

Vipin V. Fulzele, Warora, Chandrapur, Maharashtra, India. E-mail: vipinfulzele29@rediffmail.com.

Bandu T. Lalsare, Round Officer, Warora, Chandrapur, Maharashtra, India. E-mail: btalsare@rediffmail.com.

Asad R. Rahmani, Director, Bharat Natural History Society (BNHS-India), Hornbill House, Shaheed Bhagat Singh Road, Mumbai 400001, Maharashtra, India. E-mail: rahmani.asad@gmail.com.

Manuscript received on 06 December 2014.

The Lesser Florican *Sypheotides indica* (Otididae: Bustards) is endemic to the Indian Subcontinent. It is known for its irregular local movements in its non-breeding season (Sanakaran 1990). It was once widespread, and common, but now breeds in a few areas in Gujarat, south-eastern Rajasthan (Bhardwaj *et al.* 2011), north-western Maharashtra, and western Madhya Pradesh (Dutta *et al.* 2013). It was also once common in the Terai region of Nepal, but is now rare. India plays a major role in the protection of the 'Endangered' Lesser Florican as 90% of its global population is found in India (Sankaran *et al.* 1992). Due to the loss of its potential habitat, the mosaic of grasslands, and traditional croplands, its population is declining (BirdLife International 2014). In India, the pressure on the remaining grasslands will only increase in the future, and thus the species will struggle for its survival (Rahmani 2012).

The Lesser Florican has been recorded from Pune, and its

adjoining areas, such as the Sinhagad Hills, Mulshi Hills, and the Saswad–Dive Ghats (Mahabal & Lamba 1987; Kalpavriksh 2001). It was mentioned as 'rare' in Mumbai (Anonymous 1909). A bird was shot near Pen, in Raigad District, in November 1896 (Anonymous 1898). It was reported from Nannaj Bustard Sanctuary in Sholapur District (Islam & Rahmani 2002), and a chick was rescued in year 2006 from the Karmala area of Solapur (Rahmani *et al.* 2014). It was common in Nashik-, and Ahmednagar Districts (Hume & Marshall 1879), and sighted in the Gangapur and Hosor grasslands in Nashik District in 1998 (Pittie 1998; Raha & Prakash 2001). A female of the species was rescued by a local person in October 2002 at Ambap village, 20 km off the Pune–Bengaluru highway (Rahmani *et al.* 2014). In the Vidarbha region of Maharashtra, which is part of Central India, the Lesser Florican has been recorded from Borgao Manju, Akola, and Darwha, in Yavatmal District (Kasambe & Gahale 2010). Mr.

Kaustubh Pandharipande from Akola, Maharashtra is successfully working with *phase pardhis*, a tribal community known for their wildlife hunting skills, is now involved in monitoring programme for protection of Lesser Florican in Washim-, and Akola Districts (Pallavi 2014).

We have been visiting the Chandrapur area since January 2012 to monitor the 'Critically Endangered' Great Indian Bustard *Areotus nigriceps* (GIB), which is endemic to India, and Pakistan (BirdLife International 2014). We recorded five to six GIB in the Warora tehsil of Chandrapur (Fig. 1). These birds were using an area between Wanoja and Marda villages (20.25144°N, 78.95265°E) for breeding and an area, c. 15 km in radius, for ground (Rahmani *et al.* 2014). We visited the area on 22 March 2013 before the harvesting season. In a fallow area near Wanoja village, 2 km from Warora, we flushed one Lesser Florican from 1.2 m tall grass at 1415 hrs. Because of poor light we could not get a proper photograph of the bird but based on its size, flight pattern, and wing clapping noise we assumed it as a Lesser Florican. After ten minutes another bird was flushed from the grasses, and we were able to photograph it. Unfortunately after that we could not make frequent visits to the study area.

Map showing existing and proposed developments in bustard area of Chandrapur district, Maharashtra

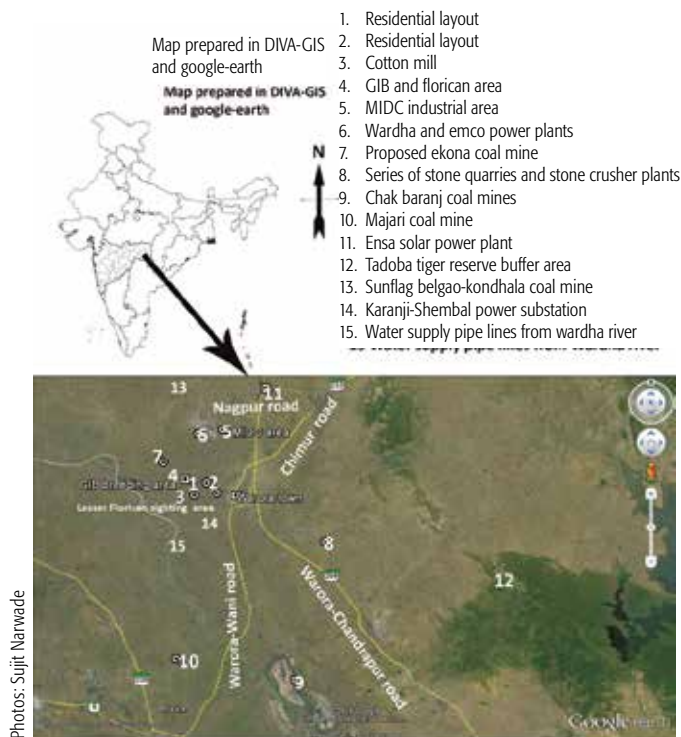


Fig. 1. Map of study area Warora-Chandrapur.

Mr. B. T. Lalsare, Round Officer, Range Forest Office, Warora, and Mr. Vipin Fulzele, local volunteer for the Bharat Natural History Society (BNHS), are monitoring the area for the last two years. They spotted two Lesser Floricans on 20 November 2014 near the Maharashtra Industrial Development Corporation (MIDC) campus of Mohbala, Warora, which is a straightline-distance of 3 km from the Marda-Wanoja villages, where we had sighted these birds earlier. When we visited this site, it was a piece of fallow land, sandwiched between a water canal, and the concrete boundary wall of an industrial unit. The grass here was 0.9–1.2

m high, and the area was inaccessible because of the high water level in the channel.

Bustard habitat in agriculture landscape of the study area

In the study area farmers take two crops in the two seasons; these vary from year to year depend on the rainfall. One is the *kharif* or monsoon crop, which is harvested at the end of the monsoon, and gathered mostly at the beginning of the cold weather. The major *kharif* crops are rice, jowar, tur, and cotton. The other is the *rabi* or winter crop, harvested usually from January to March. In the Warora, and Bhadravati areas of Chandrapur, where we sighted Great Indian Bustard as well as Lesser Florican, *rabi* crops like wheat, jowar, gram, linseed, and some pulses are grown on a large scale. As Lesser Florican is known to use a mosaic of grassland, and cropland in human dominated landscape, its breeding activity gets influenced by the grazing pattern of cattle, and quantity of rainfall in a particular area, during a given period (Sankaran 1997). For example, bustards and floricans usually avoid overgrazed areas, and are known to follow rain during their breeding seasons. Thus, traditional crop cycles play an important role in providing a conducive habitat for bustards. The Lesser



42. Pockets of fallow lands provide habitat for the Lesser Florican and GIB in croplands of Warora, Chandrapur.

Florican was found using such suitable areas during winter, when height of the crop as well as grass in fallow lands reaches 0.9–1.2 m [42].

Threats to the habitat

The area used by the two bustard species, is a private holding that is under tremendous pressure from the development lobby, as stated below (Fig. 1).

1. Settlements: As the area is just 3 km from Warora town, there is great pressure on it by people, to change its land use category, and use it for, say, brick kilns, the numbers of which have increased in the last two years.
2. Roads: The Nagpur–Chandrapur highway is being developed with new diversions, and is also being widening. This process necessitates the extraction of soil from adjacent areas for land filling. It also increases the chances of wildlife suffering road kills from construction activities. The widened roads will further endanger wildlife and restrict their free movement.

3. Industrialisation: The major crop in our study area being cotton, there is an increase in the number of cotton spinning mills in bustard habitats. We have also seen the land use categories of open lands being converted to set up ginning mills at Marda and Vanoja.
4. Quarries and crushers: Increased infrastructural activities have ensured an escalation of illegal stone quarries, and stone crushers in the grassland areas. These are adversely affecting the flora, and fauna, because of the atmospheric, and noise pollution they produce.
5. Invasive species: Exotic plant species, such as *Prosopis juliflora*, are spreading across the fallow lands, and they dominate the native species leading to reduction in potential habitat for birds like the florican.
6. Electrocution: Increasing numbers of power lines result in deaths of large birds due to collision against the overhead cables. For example, a Mottled Wood Owl *Strix ocellata* was found electrocuted on 31 July 2012, within three months of the installation of a power line for Vardha power at Wanoja village.
7. Poaching: The possibility of poaching by the large work force required by these development projects will be difficult to monitor.
8. Coal mines: An opencast coal mine known as Ekona mine, is proposed to come up right in the area where floricans have been sighted, and which is a breeding site for the Great Indian Bustard. There is great threat to the habitat from this mine and related infrastructure developments [43].

Conservation requirements

Wildlife management consists of habitat evaluation, assessment, and periodic monitoring. Participation of, and support from the local public is essential for a conservation plan to work, and its outcome become sustainable. We need growth and development, but in a sustainable way, as we are dependent on nature in direct, or indirect ways (Fig. 1). Below are some suggestions:

1. Development of alternative habitat: Almost all the habitat suitable for floricans and bustards is generally privately held, and not controlled by the state forest department. According to current and future land use scenario, soon there will be no open land available in entire Warora tehsil of Chandrapur. Therefore, plantation patches of a few hectares from the



Photo: Sujit Narwade

43. Florican habitat is surrounded by a number of coal mines in Chandrapur area (September 2012).

areas can be cleared for development of grasslands. For example, clearing of 300 ha of forest near Temurda village has been started under species recovery plan by the forest department.

2. Instead of monetary rewards, additional benefits should be given to local villagers at the gram panchayat level, so that people have a sense of pride in the occurrence of a Critically Endangered-, and habitat specialist bird in their surroundings. One needs to encourage traditional agricultural practices under special schemes, if necessary, or explore the possibility of selling bustard-friendly crop at higher prices, under the banner of bustard conservation.
3. Promotion of organic farming for long term benefit to the bustard conservation programme. Rampant use of pesticides affects birds, and their foodchain, directly, and indirectly. Therefore, it is essential to promote organic farming in bustard areas to reduce chemical contamination in their foodchain.
4. Satellite tracking of Lesser Florican for study of their seasonal and local movement.

References

- Anonymous. 1898. Proceedings of the meeting held on 16th December 1896. Contributions to the Museum. *Journal of the Bombay Natural History Society* 11 (1): 141–142.
- Anonymous. 1909. *Bombay Gazetteer*. Government of Maharashtra.
- Bhardwaj, G. S., Sivakumar, K., & Jhala, Y. V., 2011. Status, distribution and conservation perspectives of Lesser Florican in north-western India: a survey report. Wildlife Institute of India, Dehradun. 46 pp.
- BirdLife International. 2014. Species factsheets: *Sypheotides indicus*, and Great Indian Bustard *Ardeotis nigriceps*. Website URL: <http://www.birdlife.org>. [Accessed on 26 October 2014.]
- Dutta, S., Rahmani, A., Gautam, P., Kasambe, R., Narwade, S., Narayan, G., & Jhala, Y., 2013. *Guidelines for preparation of state action plan for resident bustards' recovery programme*. Submitted to the Ministry of Environment and Forests, Government of India. New Delhi. Pp. 1-67.
- Hume, A. O., & Marshall, C. H. T., 1879. *The game birds of India, Burmah, and Ceylon*. 1st ed. Calcutta: Published by the authors. Vol. I of 3 vols. Pp. i-ii, 1–279.
- Islam, M. Z.-u., & Rahmani, A. R., 2002. Threatened birds of India. *Buceros* 7 (1&2): 6 pr. II., iii–x, 1–102.
- Kalpavriksh. 2001. *Birds of Pune*. Pune, India: Kalpavriksh. Pp. i–vi, 1–136.
- Kasambe, R., & Gahale, P., 2010. Status survey and sighting records of Lesser Florican in Maharashtra. *Mistnet* 11 (2): 7–9.
- Mahabal, A., & Lamba, B. S., 1987. On the birds of Poona and vicinity. *Records of the Zoological Survey of India, Occasional Paper No. 94*: 1–115.
- Pallavi, A., 2014. Hunters turn protectors. Website URL: <http://www.downtoearth.org.in/content/hunters-turn-protectors>. [Accessed on 06 December 2014.]
- Pittie, A., 1998. Birding notes. *Pitta* 91: 3–4.
- Raha, B., & Prakash, V., 2001. Occurrence of Lesser Florican *Sypheotides indica* at Hosor, in Nashik District, Maharashtra. *Journal of the Bombay Natural History Society* 98 (2): 279.
- Rahmani, A. R., 2012. *Threatened birds of India: their conservation requirements*. Mumbai: Indian Bird Conservation Network; Bombay Natural History Society; Royal Society for the Protection of Birds; BirdLife International; Oxford University Press. Pp. i–xvi, 1–864.
- Rahmani, A. R., Kasambe, R., Narwade, S., Patil, P., & Khan, N. I., 2014. *Threatened birds of Maharashtra*. Mumbai: Oxford University Press. Pp. i–xii, 1–221.
- Sankaran, R., 1990. Ecology and behaviour of the Lesser Florican. In: *Status and Ecology of the Lesser and Bengal Floricans with Reports on Jerdon's Courser and Mountain Quail*. Anon. (ed.). Bombay: Bombay Natural History Society: Pp. 85–93.
- Sankaran, R., 1997. Habitat use by the Lesser Florican in a mosaic of grassland and cropland: the influence of grazing and rainfall. *Journal of the Bombay Natural History Society* 94 (1): 40–47.
- Sankaran, R., Rahmani, A. R., & Ganguli-Lachungpa, U., 1992. The distribution and status of the Lesser Florican *Sypheotides indica* (J.F. Miller) in the Indian subcontinent. *Journal of the Bombay Natural History Society* 89 (2): 156–179.