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SHORT COMMUNICATION

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A WINTER ROOST COUNT OF THE SHORT-EARED OWL *ASIO FLAMMEUS* (AVES: STRIGIFORMES: STRIGIDAE) AT PORBANDAR, GUJARAT, INDIA

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Abstract: The Short-eared Owl *Asio flammeus* is a common to uncommon winter visitor to Gujarat. The species roosted in bushes of *Prosopis juliflora* in the grassland of Shiroda area, Odadar Village of Porbandar District. Communal roosts were identified by foot surveys between 9–17 November 2016. A total of 20 individuals co-existed with grazing cattle in the grassland of ca. 1 km². At present due to their restricted nesting habits and nomadic nature, the species is vulnerable to habitat loss at their feeding and roosting grounds. Conversion of open habitats to agriculture, grazing, recreation, housing and tourism development are the current threats to the species in the wetland complex. The IUCN conservation status further confirms that though they are assessed as Least Concern, in spite of the species population constantly declining with global population estimated at 3,000,000 individuals which equates to 2,000,000 mature individuals. The present study is the first systematic attempt to count a roost in Gujarat.

Keywords: Gujarat, IUCN, Porbandar, Short-eared Owl, wetland, wintering roost.

The Short-eared Owl *Asio flammeus* is a widespread winter migrant to India (Blanford 1894). It prefers grassland and open country (Ali & Ripley 1987). In India, it is reported from Maharashtra (Jamdar & Shrivastava 1988; Chandrasekaran 1995), Madhya Pradesh (Pasha et al. 2004), Tamil Nadu (Thyagaraju 1933), Kerala (Jayson & Mathew 2002; Chandrasekhara & Nameer 2003), Gujarat (19 November 1993 specimen: The Field

Museum), Rajasthan (5 January 1949 specimen: The Field Museum; Singh 1997), Karnataka (20 January 1941 specimen: The Field Museum), Uttar Pradesh (Grewal 2000), Andhra Pradesh (Kanniah & Ganesh 1993) and other states.

The Short-eared Owl has an extremely large range, and therefore it does not approach the thresholds for Vulnerable under the range size criterion (extent of occurrence <20,000 km² combined with a declining or fluctuating range size, habitat extent/quality, or population size and a small number of locations or severe fragmentation) as well as under the population trend criterion (>30% decline over 10 years or three generations) and population size criterion (<10,000 mature individuals with a continuing decline estimated to be >10% in 10 years or three generations, or with a specified population structure) in IUCN conservation status evaluation. For these reasons the species is designated as Least Concern.

At present, due to their restricted nesting habits and nomadic nature, the species is vulnerable to habitat loss on their feeding and roosting grounds. Conversions of open habitats to agriculture, grazing, recreation, housing and tourism development are the current threats to the

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species in the wetland complex.

The Short-eared Owl is a common to uncommon winter visitor to Gujarat (Ganpule 2016). The species is usually present from September/October to March/April in the Indian Subcontinent (Grimmett et al. 1998; Ali & Ripley 2001; Srinivasulu & Srinivasulu 2007).

The species usually nests and roosts on the ground and prefers grassland habitat. It is often seen flying low like harriers; its opportunistic diet consists mainly of small mammals and rarely small birds. It is an active hunter, flying low over the ground (less than 6 feet) in search of prey; usually hovers and drops vertically pouncing on prey. The species is considered to be a highly migratory in the northern limits of its global range. Banding data shows 1,000-mile movements in 50 days. These movements also vary and large movements are often related to juvenile dispersals. The longevity record for a Short-eared Owl in the wild is 13 years (Rumet 2012).

MATERIAL AND METHODS

Observations and counts were recorded in November 2016 for nine days in the Shiroda region, located between

Odadar and Mokar villages of Porbandar District (Fig. 1). It is located about a distance of 5km from Porbandar Somnath National Highway and connected by a tar road with Odadar and Mokar villages. The study area is Gosabara Mokarsagar Wetland Complex (here after Mokarsagar) which was declared an Important Bird and Biodiversity Area by the Bombay Natural History Society and Birdlife International in March 2017 (Rahmani et al. 2016).

Mokarsagar (21.565°N & 69.764°E) is the largest wetland of Porbandar District and spread across 106km². The wetland complex supports more than 20,000 waterbirds annually and thus is shortlisted as a potential Ramsar site as well as Biodiversity Heritage Site. Recently, a public interest litigation has been also filed in Gujarat High Court to declare it as a wildlife sanctuary.

The wetland complex is drained by the Bhadar River, the longest river of the Saurashtra region along with River Billeleshwari (Minsar). Before the 1970s, the region was an intertidal mudflat due to the ingress of sea water through the mouth close to Gosabara (21.535°N & 69.710°E) which mixed with fresh water during the

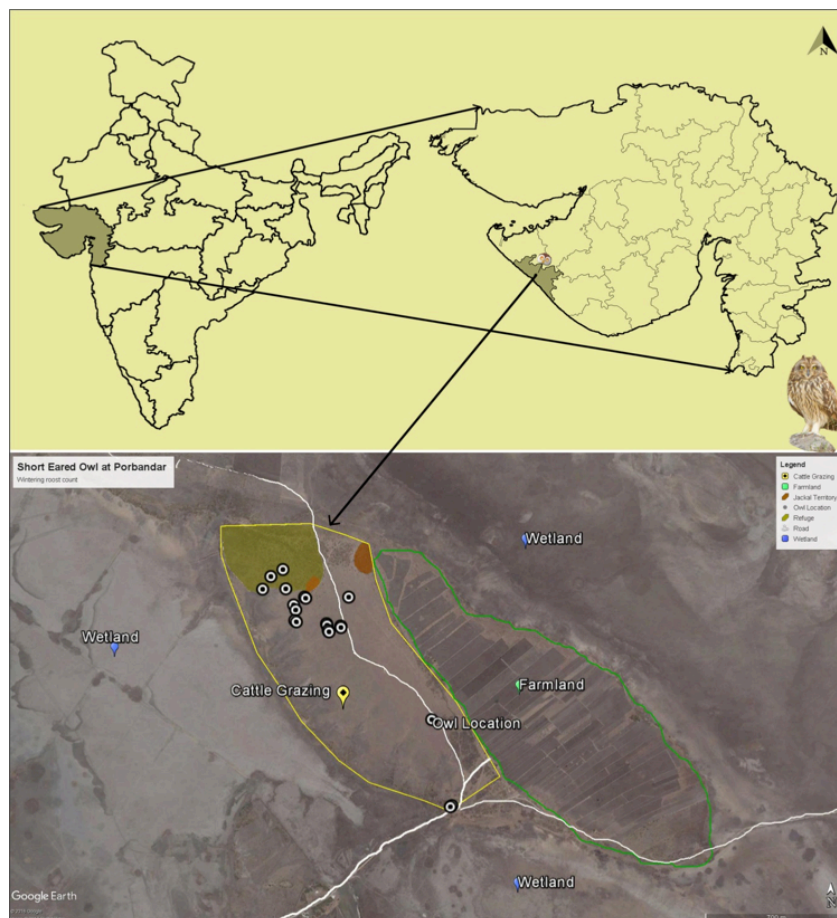


Figure 1. Study area (Shiroda island of Mokarsagar) of Short-eared Owl covering an area of 1km²

monsoon season. The culvert was created near Gosa Village and resident fishermen used fixed oja nets for catching Prawns *Penaeus penicillatus* (Mansuri 1986). Gradually the tidal influx started impacting the soil and fresh water biota of the region. In order to prevent and control the impacting phenomenon Salinity Ingress Prevention Cell (SIPC), Gujarat, built structures across the creek such as tidal regulators (masonry wall) and bunds at different locations (Singh et al. 2014). These structures prevented the free flow of tidal ingress. As a result prawn fishing was stopped but the quality of agricultural soil improved.

In Mokarsagar, there are four elevated inland islands which usually do not get submerged during the peak monsoon (because the islands lie at about 4–6 m above sea level and the Mokarsagar is at sea level). Shiroda is one amongst these four islands mainly used by the Odadar villagers for grazing livestock.

The wetland complex has been monitored since 2012 for water as well as terrestrial bird count, the frequency is once every month of the year. On 9 November 2016, during the survey in Shiroda, one Short-eared Owl was observed and photographed in the bushes close to the road (Image 1). The bird was not disturbed and count and observation plan was structured to survey the region for the total wintering population of the species.

It was assumed that the Short-eared Owl will be present on all of the four islands of Mokarsagar. Starting from Shiroda, all islands were surveyed for presence of Short-eared Owls. The region was diligently surveyed on foot (after Fuller & Mosher 1987). Randomly, 500m long transect lines (total nine) were conducted in the study area. Walking the transects and counting of roosting birds on both sides and locations were geo-tagged with Garmin eTrex® 30x Handheld GPS device. Apart from Shiroda, the Short-eared Owl was not found on

any of the other islands of Mokarsagar. Thus, the data presented is from Shiroda only.

OBSERVATION AND DISCUSSION

The species was found to roost in bushes of *Prosopis juliflora* on Shiroda island. Realizing the fact that the species was spotted for the first time, an effort for identifying communal roosts was undertaken by going on foot surveys. A total 20 individuals (Table 1) were observed to co-exist with grazing cattle in the grasslands spread over an area of 1km² between November 9–17, 2016 (Table 2; Fig. 2). The species prefers bushes to hide (Image 2) but, when unknowingly disturbed by cattle herders, it flies to refuge areas as shown in Fig. 1. The refuge area covers 0.14km² with dense vegetation of *Proposis* spp. along with grasses.

The species was observed to co-exist with mammals like Golden Jackal *Canis aureus*, Bengal Fox *Vulpes bengalensis*, Jungle Cat *Felis chaus*, Nilgai *Boselaphus tragocamelus*, Wild Boar *Sus scrofa*, and domestic cattle *Bos domesticus*. The species was also observed to co-exist with 48 bird species (Table 2). No attempts were made to study its interactions with other species. Generally, it remains silent during wintering stage thus no call was observed.

The current sighting of the Short-eared Owl in

Table 1. Observation chart

Date	Time (hrs)	Comments
09.xi.2016	18:00	Area is mainly grassland with scattered <i>Prosopis juliflora</i> ; location was also very close to a 'kacha' road less frequently used
10.x.2016	16:00–18:00	Bird was found at same place but remain stable and hidden.
11.xi.2016	18:15	Bird was spotted about 200m away from previous site from the road
13.xi.2016	16:00–18:00	Observed two pairs (4 individuals) from the road
14.xi.2016	16:00–18:00	Observed 12 individuals by foot survey
16.xi.2016	16:00–18:00	Observed 14 individuals by foot survey
17.xi.2016	16:00–19:00	Observed 20 individuals by foot survey



Image 1. Short-eared Owl on Shiroda Island

Table 2. Bird Species observed to coexist with Short-eared Owl

	Bird Species	Status in Gujarat (Ganpule 2016)
1	Common Quail <i>Coturnix coturnix</i>	Common winter visitor
2	Grey Francolin <i>Francolinus pondicerianus</i>	Common resident
3	Cattle Egret <i>Bubulcus ibis</i>	Common resident
4	Short-toed Snake-Eagle <i>Circaetus gallicus</i>	Common to uncommon resident
5	Eurasian Marsh-Harrier <i>Circus aeruginosus</i>	Common winter visitor
6	Pallid Harrier <i>Circus macrourus</i>	Common to uncommon winter visitor
7	Montagu's Harrier <i>Circus pygargus</i>	Common winter visitor
8	Shikra <i>Accipiter badius</i>	Common resident
9	Indian Thick-knee <i>Burhinus indicus</i>	Common resident
10	Yellow-wattled Lapwing <i>Vanellus malabaricus</i>	Common resident
11	Red-wattled Lapwing <i>Vanellus indicus</i>	Very Common resident
12	Kentish Plover <i>Charadrius alexandrinus</i>	Common resident and local winter migrant
13	Barred Buttonquail <i>Turnix suscitator</i>	Resident and fairly common resident
14	Chestnut-bellied Sandgrouse <i>Pterocles exustus</i>	Common resident
15	Rock Pigeon <i>Columba livia</i>	Very common resident
16	Eurasian Collared-Dove <i>Streptopelia decaocto</i>	Common resident
17	Greater Coucal <i>Centropus sinensis</i>	Common resident
18	Sykes's Nightjar <i>Caprimulgus maharattensis</i>	Uncommon winter visitor
19	Indian Nightjar <i>Caprimulgus asiaticus</i>	Common resident
20	Green Bee-eater <i>Merops orientalis</i>	Common resident
21	Eurasian Kestrel <i>Falco tinnunculus</i>	Common winter visitor
22	Isabelline Shrike <i>Lanius isabellinus</i>	Winter visitor
23	Bay-backed Shrike <i>Lanius vittatus</i>	Common resident

	Bird Species	Status in Gujarat (Ganpule 2016)
24	Long-tailed Shrike <i>Lanius schach</i>	Common resident
25	Southern Grey Shrike <i>Lanius meridionalis</i>	Common resident
26	Black Drongo <i>Dicrurus macrocercus</i>	Very common resident
27	Rufous-tailed Lark <i>Ammomanes phoenicurus</i>	Very common resident
28	Ashy-crowned Sparrow-Lark <i>Eremopterix griseus</i>	Very common resident
29	Indian Bushlark <i>Mirafraery thoptera</i>	Common resident
30	Greater Short-toed Lark <i>Calandrella brachydactyla</i>	Common winter visitor
31	Sand Lark <i>Alaudala raytal</i>	Common resident
32	Crested Lark <i>Galerida cristata</i>	Common resident
33	Red-vented Bulbul <i>Pycnonotus cafer</i>	Very common resident
34	Sykes's Warbler <i>Iduna rama</i>	Common winter visitor
35	Common Tailorbird <i>Orthotomus sutorius</i>	Common resident
36	Plain Prinia <i>Prinia inornata</i>	Common resident
37	Lesser Whitethroat <i>Sylvia curruca</i>	Common winter visitor
38	Common Babbler <i>Turdoides caudata</i>	Very common resident
39	Large Grey Babbler <i>Turdoides malcolmi</i>	Very common resident
40	Jungle Babbler <i>Turdoides striata</i>	Common resident
41	Indian Robin <i>Copsychus fulicatus</i>	Common resident
42	Oriental Magpie-Robin <i>Copsychus saularis</i>	Common resident
43	Rosy Starling <i>Pastor roseus</i>	Very common winter visitor
44	Purple Sunbird <i>Cinnyris asiaticus</i>	Common resident
45	Paddyfield Pipit <i>Anthus rufulus</i>	Common resident
46	Long-billed Pipit <i>Anthus similis</i>	Common winter visitor
47	Tawny Pipit <i>Anthus campestris</i>	Common winter visitor
48	Indian Silverbill <i>Euodice malabarica</i>	Common resident

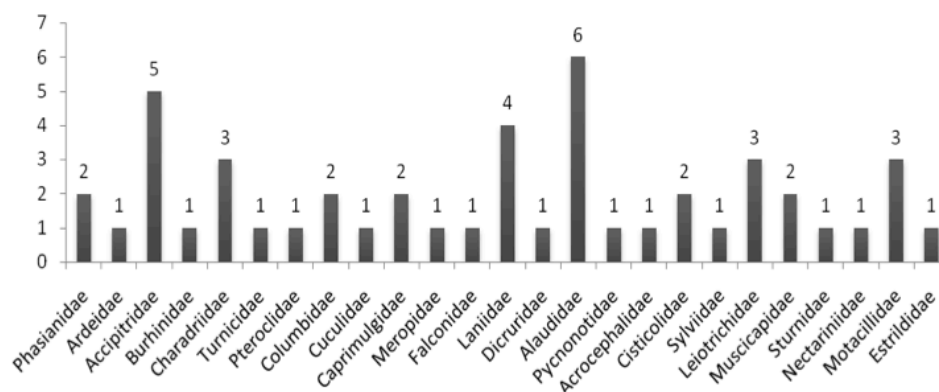


Figure 2. Bird Species of different families observed to coexist with Short-eared Owl



Image 2. Short-eared Owl in the bushes of *Prosopis juliflora*

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Porbandar is the first published record for the district as it was not mentioned in previous checklists (Meena & Kumar 2014). Foot surveys were repeated for three days on the same transects and a maximum number of the owls were observed on the third day (i.e., 17 November 2016). Prey base and feeding ecology were not studied, however, we speculate that there is abundant prey at Shiroda Island & its adjacent farmlands, and the dense vegetation of *Prosopis juliflora* along with grass provide spaces roosting and sheltering. The present study is the first systematic attempt to count Short-eared Owls in Gujarat and reports the highest wintering roost congregation of the species.

Based on our limited study and data, we recommend that the management measures should maintain large contiguous tracts of wetland, and grassland habitat for the species and their prey. Controlled human disturbance and predation as well as possible, public education, and continued field research is required.

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