Get my head around owls: people perception and knowledge about owls of Andaman Islands

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Abstract: Understanding people’s perceptions and knowledge about birds in an endemic bird area is a prerequisite for bird conservation. This is more so in the case of non-charismatic birds such as owls. In this context, we conducted a questionnaire survey about owls in the North Andaman Island between January 2016 and 2018. We interviewed 203 respondents from six market places in North Andaman tehsil, and collected data on their socio-economic status as well as their knowledge on owls. Although all the respondents were familiar with owls, only 9% of them identified all species of owls in the Andaman Islands. Around 98% of respondents were aware of owl diets, either partly or wholly. We found several superstition beliefs revolving around owls. Two species, Otus sunia and Ninox obscura were associated with negative beliefs while Tyto deroepstorffi was associated with positive beliefs. Generalized linear model with the demographical predictors showed that positive attitudes towards owls is associated with age (older), education (literacy), revenue villages and temporary houses. We conclude that Tyto deroepstorffi had the highest positive values among islanders and hence, may be considered as a focal species to create awareness about owls and to protect other endemic owls of the Andaman Islands. Awareness programmes targeting younger, illiterate people, and land encroachers may help in conservation of cryptic owl species of Andaman.

Keywords: Awareness, bad omen, beliefs, culture, diet, education, endemic owls, questionnaire survey.
INTRODUCTION

Involving local communities in conservation programmes is crucial, especially in areas where people share resources with wildlife. Without understanding the local community’s perceptions and knowledge about wildlife, conservation efforts may not produce expected results (Kellert & Westervelt 1984; Kaiser 1999). Among birds, owls have a special place in local culture—either positively or negatively—as they are associated with many cultural and spiritual narratives that lead to positive or negative encounters with owls that result in worship or retaliation (such as through the destruction of nests, hunting and poisoning of adults). Even though owls do have human-like forward facing eyes, they are often portrayed negatively in many societies and cultures across the world, possibly due to their nocturnal activity patterns, loud vocalisations and silent flights. However, communities across the world often have different perspectives on different owl species. It is, therefore, important to understand local knowledge about owls and peoples’ perceptions about the birds.

Throughout India, owls are considered as birds of ill omen, messengers of bad luck or servants of death (Santhanakrishnan et al. 2012). In some parts of India, pale-coloured owls are considered the vehicle of goddess Laxmi and hence, people welcome owls into their homes in the belief that these birds will bring wealth and prosperity (Srivastava 1987). The same believers tend to kill owls within their homes to force goddess Laxmi to remain. On full moon nights and night of the festival Diwali, believers would sacrifice owls under the assumption that it will improve the family’s wealth (Padhy 2016).

India has 36 species of owls belonging to two families namely, Tytonidae (five species) and Strigidae (31 species) (Praveen et al. 2021). Owls are persecuted and also traded. Commonly traded species are the Common Barn Owl Tyto alba, Indian Eagle Owl Bubo bengalensis, Jungle Owlet Glaucidium radiatum, Indian Scops Owl Otus bakkamoena, Brown Fish Owl Ketupu zeylonensis, and Mottled Wood Owl Strix ocellata (Ahmed 2010).

The Andaman Islands have been recognised as an endemic bird area (EBA) for a high concentration of endemic birds (nearly 32%) (Birdlife International 2021; Praveen et al. 2021), most of which require immediate conservation attention. Five species of owls—the Andaman Barn Owl Tyto deroepstorffii, Andaman Scops Owl Otus belli, Andaman Hawk Owl Ninox affinis, Hume’s Hawk Owl Ninox obsoleta, and Oriental Scops owl Otus sunia—are known from the Andaman archipelago (image 1–5). The first four are endemic to the Islands. Despite this high diversity and endemicity of owl species, information on people’s perceptions of these magnificent nocturnal birds is anecdotal.

Except for a few indigenous tribal communities (i.e., Andamanese, Onge, Jarawa, and Sentinelese) and a few settlers from Burma, most of the human population in the Andaman Islands migrated from mainland India particularly from Jharkhand, West Bengal, Tamil Nadu, Kerala, and Andhra Pradesh (Vidyarthi 1971). The Andaman Islands are culturally and biologically rich. So, the interaction of residents here with forests and local wildlife is often unavoidable and complex. Considering the diverse cultural beliefs among people in the area and the high degree of endemism in owls, understanding the knowledge and perceptions of local communities is a prerequisite for the future conservation of owl species in the Andaman Islands. In this context, this study was developed to document the knowledge and perceptions of North Andaman islanders on owls.

METHODS

Study area

The study was conducted in the North Andaman Island, which comes under Diglipur tehsil of North and Middle Andaman district, Andaman & Nicobar Islands, India. The North Andaman Island lies between 13.708°N, 92.607°E & 13.657°N, 93.173°E over 1,400.85 km². The North and Middle Andaman district comprises of 63 wildlife sanctuaries and one national park (Prasad et al. 2010). Diglipur tehsil consists of 72 villages. According to Census 2011, a total of 10,714 persons are residing in these villages. We conducted questionnaire surveys in and around six market places (Aerial Bay, Pachimsagar, Ram Nagar, Kalighat, Kishori Nagar, and Radha Nagar; Figure 1). We selected these market places because people gather here from both revenue and encroached settlements and all five species of owls were reported in these villages during our earlier survey (Babu et al. 2019). Irrespective of the settlement type, rain-fed agriculture and fisheries were the primary occupations of these islanders (Anon 2011).

Data collection and analysis

We conducted open-ended questionnaire surveys with same set of questions but without any specific order because our objective was to create baseline information on what people know about owls and to record the beliefs surrounding these birds. On selecting
a participant for the survey, we described the nature of our work and inquired about his/her willingness to participate in the interview. Then, we considered them as our respondents and asked their socio-economic background (gender, age, occupation, village type, house type, and literacy level) followed by questions related to owls. We asked questions such as respondents’ familiarity with owls (yes or no), knowledge of owl species in the area (one to five), identification technique used (e.g., morphology, calls, behaviour), diet of owls (prey items – descriptive) and their beliefs about owls (positive and negative beliefs; descriptive). We showed them pictures of owls and mimicked or played the calls of owls to confirm species identity. Since most of the respondents knew Hindi, all questions were asked in this language. Occupations of respondents were classified into three categories: regular workers (people
with employment opportunities for the entire year), irregular workers (people who work for half the year), and unemployed (people without a job). Housewives were considered unemployed for this study. The literacy level of respondents was grouped into two categories: literate (if the person could either read or write) and illiterate (if the person could neither read nor write). Settlements were categorised into two namely revenue land and forest encroachment land. Finally, the houses of respondents were categorised as permanent (concrete house), semi-permanent (walls are concrete and roof as thatched), temporary house (thatched and mud construction) and rented house. To identify the demographic factors that influence the perception of people, we ran generalized linear model with logit link for three species of owls (O. sunia, N. obscura, and T. deroepstorffii) using R programme (RStudio Team, 2015).

RESULTS

Socio-demographic details of respondents
Altogether, we interviewed 203 respondents, 57% of whom were men and 43% women, across six survey sites: Kalighat (26 people), Kishorinagar (42 people), Pachimsagar (27 people), Radhanagar (30 people), Aerial Bay (37 people), and Ramnagar (41 people). The average age of female and male respondents were 36 years (ranging 21–57) and 46 years (ranging between 21–65) respectively. Out of 203 people, 54% and 46% were considered literate and illiterate, respectively. Nearly 22% of the respondents were regular workers, 45% were irregular workers, and 33% were unemployed. Twenty-two per cent of respondents had permanent houses while 50% had semi-permanent houses. Around 20% and 8% of the respondents lived in temporary and rented houses respectively. Nearly 61% of people lived in revenue villages and 39% lived on encroached forest land.
Knowledge about owl richness & identification

All respondents said that they have encountered the owls and have known about these birds. The respondents also confirmed the presence of owls around their houses. Amongst respondents, about 74% of them know owls as ‘ullu’ (Hindi: owls) and 17% of knew them as ‘pecha’ (Bengali: owls). Interestingly, only 9% of the people could distinguish between ‘ullu’ (vernacular name for owls) and ‘pecha’ (refers to the barn owl). However, their knowledge on owl richness was meagre. Only 9% of people could differentiate between the five species of owls and their calls. Nearly 44% (90 people) said that they have seen or heard four different species, 34% (70 people) of people recognized three species, 11% (22 people) knew only two species and only two respondents said they can recognize only one species in Andaman. People often got confused between two species of Hawk Owls (Ninox genus) and scops-owls (Otus genus) and this lead to wrong identification of owls. Interestingly, 7% of people identified Andaman Scops owl calls as “jungli murgi” (Watercock Gallicrex cinerea) and one respondent identified Oriental Scops Owl calls as that of a frog. A large proportion of people could identify the Andaman Barn Owl (Figure 2).

Respondents correctly differentiated owl species using three common characters—owl size, colour, and vocalization—and sometimes, a combination of these characters. T. deroepstorffi and O.sunia were largely identified based on their size difference. To differentiate N. obscura from other species, respondents used all three characters (Figure 3).

Knowledge of locals about owl’s prey

Figure 4 illustrates the major food items of owls, as listed by respondents of the survey. A large proportion of respondents (44% people) reported that rats are the preliminary food source followed by frogs (26%), insects (15%), and snakes & lizards (8%). Interestingly, 11 people reported that bats are the major prey of owls in the Andaman Islands. Three people said fruits are food for owls. None of the respondents mentioned birds as owl prey.

Perception about owls

Nearly 80, 77, and 55 per cent people reported negative beliefs about O. sunia, N.obscura and N. affinis, respectively. Seventy-one per cent of respondents mentioned that T. deroepstorffi would bring good luck (positive beliefs) and nearly 59% of people were neutral about O. balli (Table 1). Illiterate and young persons had more negative attitudes about O.sunia, whereas those resides in temporary houses in revenue villages were more positive about N.obscura, and T. deroepstorffi (Table 2).

DISCUSSION

Residents of North Andaman are familiar with owls but most of them could not identify all species in the area. This may be due to the nocturnal habits and skulking nature of owls. Owls common in and around human habitation were correctly identified by most respondents using size and calls of these owls, in
People’s perception of owls

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particular the Andaman Barn Owl (Figure 2). Most of them are aware of the ecological role played by owls, i.e., control of rodents and insects in agriculture fields (Figure 4). A majority of respondents worship the Andaman Barn Owl, in the belief that it brings wealth to the family. However, owls in other genus (Otus and Ninox) are being killed or chased away by locals under the superstition that they bring illness/bad luck.

Table 1. Summary of respondent’s beliefs about different species of owls in the Andaman Islands.

<table>
<thead>
<tr>
<th>Beliefs of respondents</th>
<th>O. balli (N= 49)</th>
<th>O. sunia (N= 157)</th>
<th>N. affinis (N= 64)</th>
<th>N. obscura (N= 170)</th>
<th>T. deroepstorffi (N= 181)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive beliefs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brings luck</td>
<td>1 (2%)</td>
<td>0 (0%)</td>
<td>3 (5%)</td>
<td>1 (1%)</td>
<td>128 (71%)</td>
</tr>
<tr>
<td>Beneficial</td>
<td>8 (16%)</td>
<td>2 (1%)</td>
<td>6 (9%)</td>
<td>12 (7%)</td>
<td>7 (4%)</td>
</tr>
<tr>
<td>Negative beliefs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loud vocalisations</td>
<td>0 (0%)</td>
<td>83 (53%)</td>
<td>6 (9%)</td>
<td>27 (16%)</td>
<td>2 (1%)</td>
</tr>
<tr>
<td>Brings bad luck</td>
<td>9 (18%)</td>
<td>36 (23%)</td>
<td>21 (33%)</td>
<td>32 (19%)</td>
<td>3 (2%)</td>
</tr>
<tr>
<td>Weird and threatening</td>
<td>2 (5%)</td>
<td>6 (4%)</td>
<td>8 (13%)</td>
<td>71 (42%)</td>
<td>26 (14%)</td>
</tr>
<tr>
<td>Neutral beliefs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does not disturb me</td>
<td>12 (24%)</td>
<td>20 (13%)</td>
<td>2 (3%)</td>
<td>11 (6%)</td>
<td>6 (3%)</td>
</tr>
<tr>
<td>Not aware of folklore</td>
<td>17 (35%)</td>
<td>10 (6%)</td>
<td>18 (28%)</td>
<td>16 (9%)</td>
<td>9 (5%)</td>
</tr>
</tbody>
</table>

Table 2. Demographic factors influencing the perception of people about owls in Andaman Islands.

<table>
<thead>
<tr>
<th>Genus</th>
<th>Predictors</th>
<th>Estimate</th>
<th>SE</th>
<th>z-Value</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otus sunia (N= 175)</td>
<td>Intercept</td>
<td>-24.360</td>
<td>13.3000</td>
<td>-0.18</td>
<td>0.98</td>
</tr>
<tr>
<td></td>
<td>Literate</td>
<td>1.7360</td>
<td>0.50450</td>
<td>3.442</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>0.1257</td>
<td>0.06074</td>
<td>2.069</td>
<td>0.03</td>
</tr>
<tr>
<td>Ninox obscura (N= 153)</td>
<td>Intercept</td>
<td>0.8148</td>
<td>1.60346</td>
<td>0.508</td>
<td>0.61</td>
</tr>
<tr>
<td></td>
<td>Temporary houses</td>
<td>1.5730</td>
<td>0.7569</td>
<td>2.078</td>
<td>0.03</td>
</tr>
<tr>
<td>Tyto deroepstorffi (N= 181)</td>
<td>Intercept</td>
<td>1.4623</td>
<td>2.18893</td>
<td>0.668</td>
<td>0.50</td>
</tr>
<tr>
<td></td>
<td>Revenue village</td>
<td>1.9042</td>
<td>0.498304</td>
<td>3.821</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Figure 3. Morphological and behavioural characteristics being used to identify owl species by the respondents in North Andaman Islands.
In general, people show more interest towards a bird species that has high aesthetic values (colourful plumage), large body size and unique behaviours (including calls) and hence, they give more attention to those species and show keener interest to classify them using specific local names (Berlin 1992; Johannes 1993). Although all respondents knew of the presence of owls on their lands by referring to them using the common name ‘ullu’, they were not able to correctly distinguish all the five species. It is well known that the local community may use a single name to refer a group of animals if they are not attractive to them (Fleck et al. 2002). However, a majority of people could identify at least three genera present on the Andaman Islands (Figure 2) by their sizes. Since there are more than one species in two genera (Otus and Ninox), islanders found it difficult to distinguish species of similar size. This is because most respondents are from mainland India and Burma. Hence, they could better identify widespread species such as the Barn Owl, Oriental Scops Owl, and Brown Hawk Owl (whose call resembles that of the Hum’s Hawk Owl) than endemic species such as the Andaman Scops Owl and Andaman Hawk Owl.

In the Andamans, there was a programme to introduce Barn Owls from the mainland to the Island to control rodents in oil palm plantations (Sundaramoorthy 2010). However, protests by locals against this has created an awareness among residents regarding the ecological role that owls play. This could be the reason for a higher percentage of respondents reporting rats as a major component of owl diets. Even though many respondents considered bats as one of the prey items of owls, none considered birds to be prey. This result indicates that residents of Andaman Islands do not see owls as raptors.

Birds are better appreciated than reptiles and amphibians (Czech & Krausman 2001) but our results indicate that this statement cannot used as a thumb rule for owls. The perceptions of people regarding the importance and conservation of owls in the Andaman Islands are likely to depend on their cultural beliefs. People rank species based on the cultural knowledge about the species (Moral & Camacaro 2011). This could be the reason for the higher appreciation of the Andaman Barn Owl by locals when compared to other species in the vicinity, because Andaman Barn Owls are culturally believed to be the vehicle of goddess Laxmi, as per Hindu mythology (Srivastava 1987). Studies suggest that unpopular and wild species receive negative attitudes from people (Bjerke et al. 2003; Røskaft et al. 2003; Lindemann-Matthies 2005; Ceriaco 2012; Almeida 2014; Alves et al. 2014). Our study on population assessment of owls in Andaman (Babu et al. 2019) revealed that O. sunia and N. obscura are highly abundant and found in wide array of habitats whereas N. affinis and O. balli were uncommon and found in specific habitats. Even though the people had higher exposure to two generalist and abundant species, they were more negative towards them. This is clear that whether the species is either popular or wild, folklore and superstitious belief play a major role in their acceptance. Andaman Barn Owls are celebrated in the ‘Laxmi Puja’ festival while other species are considered as bad omen, and have lower conservation values. By contrast, a study in mainland India (Santhanakrishnan et al. 2012) found that 69% of respondents have negative beliefs about Barn Owls Tyto alba. Higher neutral values for O. balli and N. affinis are due to their fewer interactions with humans since both species are found to be habitat specialists and forest dwellers (Babu et al. 2019).

Though differential responses were received from the people of North Andaman Island about different species of owls, three predictors were found to contribute more to their perception. Literate and older people living in temporary houses showed positive response towards these species. It is not surprising that literacy level influenced the perception positively (Heinen 1993; Fiallo & Jacobson 1995; Infield 1988). The people who have the ability to read and write are exposed to the species profiles from media and other sources so they could understand better than those that are illiterate. Older people due their higher level

![Figure 4. Diet of owls as listed by the respondents in the Andaman Islands.](image-url)
of experience, knowledge and exposure to owls tend to have less belief in the folklore about species (Ceriaco 2012). Highly appreciated *Tyto alba* have positive perception from the residents of revenue villages. We summarize that Tyto *alba* have the highest positive values among islanders and hence, it may be used as a surrogate species to create awareness about less-appreciated owls. The inherited traditional and cultural knowledge on Barn Owl would help ecologists and conservation biologists to convince locals about the similarity among the species and to reduce the negative attitudes towards other owl species. Further, both positive and negative attitudes vary with education, age, and residency. So, it is evident that lack of knowledge is the primary factor for the negative attitudes and therefore regular awareness program targeting this group may change their attitude towards owls.

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