

perching on a snag with partially extended wings and uttering calls incessantly for more than an hour. Its mate remained at a distance and seemed not to pay any attention to the displaying bird. The display eventually culminated in offering food by the displaying bird to the other bird when the attention of the latter was successfully drawn by the prolonged display of the former. Both the birds then flew to a mud bank and started excavating a tunnel. After some time they again took their previous perches and the display resumed.

One endemic Andaman Coucal *Centropus andamanensis* was found dead on the road due to collision with road traffic. The India Gate cave in Middle Andaman was found to be devoid of any Common Edible-nest Swiftlet *Aerodramus fuciphaga*. However in the India Gate cave, we recorded a small colony of about 20 intermediate horseshoe bats *Rhinolophus affinis*. We learnt from the local people that poaching of Common Edible-nest Swiftlet nests was ongoing.

First Report of Pheasant-tailed Jacana

We recorded the Pheasant-tailed Jacana *Hydrophasianus chirurgus* during this survey, which is a first record for the Andaman Islands. Two birds were seen at the waterbody behind the aerodrome at Port Blair. They were seen with Pond Herons *Ardeola grayii*, Lesser Whistling Ducks *Dendrocygna javanica*, Yellow Bittern *Ixobrychus sinensis* and Common Moorhens *Gallinula chloropus*.

Avifaunal survey of Netrani Island, Karnataka, and importance of offshore islands for bird life

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Introduction

Netrani Island (14°59'N, 74°19'E) is an offshore island in the Arabian Sea, in Uttar Kannada district, and is about 19.6 km from the coastal town of Murudeshwar in Karnataka (Fig. 1). The island has an area of about 4.2 km² and the altitude ranges from seashore to a maximum of 77 m above msl. It is covered with dense evergreen vegetation and *Ficus* sp., are dominant. There is no wetland on Netrani. The island is uninhabited, but there is an annual religious pilgrimage when thousands of, mainly fishermen, devotees visit it and worship the local deities of several religions. Earlier the Indian Navy controlled Netrani, when bombing practice from ships used to be conducted with the island as the target, and therefore the island was out of bounds for civilians. We found a few empty bombshell cases on the island.

Results

The birds observed in the avifaunal survey in South and Middle Andaman during November 2009 are given in Table 1. Observations from our previous survey in January 2007 are also incorporated for comparison the same table.

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There is no landing jetty on Netrani, and its coast is rocky with coral shingles and boulders. We recorded reptiles like calotes and skinks, crustaceans like crabs, and also spiders and butterflies on the island. Marine life in the clear waters around the island is rich, and we observed various species of corals, crustaceans, squids, molluscs, fishes, sea snakes, and mammals, particularly dolphins. This rich marine life has attracted eco-tourism, and we saw Indian and foreign tourists snorkeling and scuba diving near the island.

Methodology

We reached Netrani Island on motorized boats hired at Murudeshwar, and conducted the avifaunal survey during 22 and 23 November 2008. We explored the entire island and conducted a visual survey for birds and any nests, by walking.

We also circum-navigated the island by boat and looked for any pelagic birds around the island. We photographically documented the birds seen on the island.

Observations & results

At least 300 birds belonging to 40 species, in 32 genera, 27 families, and 10 Orders were recorded over the coastal waters and on Netrani Island during the survey period (Table 1). In all, seven species of raptors were recorded on the island, of which two, White-bellied Sea-Eagle *Haliaeetus leucogaster* and Brahminy Kite *Haliastur indus*, were found nesting, and indulging in aerial displays. Other raptors recorded were the migratory Booted Eagle *Hieraetus pennatus*, Eurasian Hobby *Falco subbuteo*, and the resident Shaheen Falcon *Falco peregrinus peregrinator*, a species found in the Western Ghats. Indian Swiftlets *Aerodramus (Collocalia) unicolor* are known to breed in the cave on Netrani Island (Jerdon 1862; Pande 2005; Mahabal *et al.* 2007). We spotted, from the boat, c. 25+ swiftlets flying in and out of the cave. We did not enter the cave during the survey and hence could not estimate the number of nests in the cave. We did not find any evidence of recent breeding, in the form of old nests, eggshells, or incarcerated dead birds, of any of the tern species, though these terns were recorded on the waters around the island.

Out of the 40 species that we recorded, 16 are winter migrants, and the remaining 24, residents (Table 1). Our records of the pelagic Arctic Jaeger *Catharacta parasiticus* and Pomarine Jaeger *Stercorarius pomarinus* around Netrani Island are significant since these are rare winter migrants to India (Grimmett *et al.* 1999). These birds were observed flying over the sea, and occasionally landing on the water. Terns and gulls accompanied them. 22 Pomarine Jaegers were reported in 2002 near Burnt Island, Vengurla Rocks, Maharashtra flying southwards; various species of terns were also reported nesting on that island by Pande (2002a).

Offshore islands are present in the Gulf of Kutch, Pak Bay, Gulf of Mannar (Venkataraman & Alfred 2001) and also along the western coast of India in the Arabian Sea. Avifauna of Pirotan Island (Khachar 1982), and other islands in the Gulf of Kutch (Abdulali, 1962 1964; Bhatia 1982), Palk Bay, and Gulf of Mannar (Balachandran 1995; Sangha 1995), is well documented. In general, however, the avifauna of offshore islands along the western coast of India is poorly studied. The avifauna of Burnt

Island, Vengurla Rocks, Maharashtra, was recorded by earlier observers (Hume 1876; Abdulali 1940; Pande 2002a, b; Islam & Rahmani 2004; Pande 2005; Mahabal *et al.* 2007). Pande (2005) reported avifauna from *around* offshore islands, and the western coast of India, particularly, Gull Island off Mandve, Elaphanta Island, Khanderi Island, Korlai Rocks, Harne Fort, Suvarnadurga Fort, Burnt Island, and Sindhudurga Fort, all in Maharashtra; Grandi Island, St. George Island, Anjdeep Island, and Mugaregudda–Devagudda Islands, all in Goa; Netrani Island, and Coconut Island, in Karnataka.

As mentioned earlier, preliminary work indicates that these offshore islands are important nesting places for Indian Swiftlets, White-bellied Sea-eagles, Brahminy Kites, and various species of terns. Several other bird species are also seen on the islands. However, the offshore islands are difficult to survey due to logistics problems, and the difficulty of landing on them. There is need to prepare inventories of the avifauna present on each offshore island and on the waters around them. Information is also needed on the daily activity or seasonal movements of resident birds between islands and the nearest coast, and also about the use of islands as roosting, nesting, and feeding grounds. Further, offshore islands are important wintering grounds for several species of migratory coastal birds. These islands can also be used as survey stations from where waters around them can be monitored to study rare, wintering pelagic bird species like storm-petrels, shearwaters, jaegers, boobies, terns, and gulls, about which our knowledge is inadequate.

Repeated visits to all the offshore islands can be useful from the conservation point of view, since poaching of nests of Indian Swiftlets has been previously reported from Burnt Island, Vengurla Rocks, Maharashtra, and Netrani Island, Karnataka (Abdulali 1940; Pande 2002a; Mahabal *et al.* 2007). Presently, removal of nests of Indian Swiftlets is legally banned and now controlled. Indian Swiftlets are also protected under Schedule I of the Wildlife (Protection) Act, 1972 as amended in 2003. Islands present fragile, ecologically sensitive, and bio-geographically significant ecosystems (Das 2001), hence, the study of birdlife on all these offshore islands is important.

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Table 1. Birds recorded in marine waters around Netrani Island, and on the island, during 22–23 November 2008. (Species marked with * are winter migrants).

<p>CICONIIFORMES</p> <p>Ardeidae Western Reef Heron <i>Egretta gularis</i> 3 Indian Pond-Heron <i>Ardeola grayii</i> 1</p> <p>Anatidae Common Teal <i>Anas crecca</i> 2</p> <p>FALCONIFORMES</p> <p>Accipitridae Brahminy Kite <i>Haliastur indus</i> 22+ White-bellied Sea-Eagle <i>Haliaeetus leucogaster</i> 42+ White-eyed Buzzard <i>Butastur teesa</i> 1 Booted Eagle <i>Hieraetus pennatus</i> 1</p> <p>Falconidae Common Kestrel <i>Falco tinnunculus</i> 1 Shaheen Falcon <i>F. peregrinus peregrinator</i> 1</p>	<p>Eurasian Hobby* <i>F. subbuteo</i> 1</p> <p>CHARADRIIFORMES</p> <p>Scolopaciidae Common Sandpiper* <i>Actitis hypoleucos</i> 3</p> <p>Stercorariidae Arctic Jaeger* <i>Catharacta parasiticus</i> 4 Pomarine Jaeger* <i>Stercorarius pomarinus</i> 10+</p> <p>Laridae Black-headed Gull* <i>Larus ridibundus</i> 20+ Brown-headed Gull* <i>L. brunnicephalus</i> 12+</p> <p>Sternidae Large Crested Tern* <i>Sterna bergii</i> 30+ Sooty Tern* <i>S. fuscata</i> 2 Bridled Tern* <i>S. anaethetus</i> 8 Little Tern <i>S. albigrons</i> 2</p>
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Table 1. Birds recorded in marine waters around Netrani Island, and on the island, during 22–23 November 2008. (Species marked with * are winter migrants).

<p>COLUMBIFORMES</p> <p>Columbidae</p> <p>Blue Rock Pigeon <i>Columba livia</i> 12</p> <p>CUCULIFORMES</p> <p>Cuculidae</p> <p>Asian Koel <i>Eudynamys scolopacea</i> 1</p> <p>CAPRIMULGIFORMES</p> <p>Caprimulgidae</p> <p>Nightjar <i>Caprimulgus</i> sp. 1</p> <p>APODIFORMES</p> <p>Apodidae</p> <p>Indian Swiftlet <i>Aerodramus (Collocalia) unicolor</i> 25+</p> <p>CORACIIFORMES</p> <p>Alcedinidae</p> <p>White-throated Kingfisher <i>Halcyon smyrnensis</i> 2</p> <p>Coraciidae</p> <p>Indian Roller <i>Coracias bengalensis</i> 1</p> <p>PICIFORMES</p> <p>Picidae</p> <p>White-naped Woodpecker <i>Chrysocolaptes festivus</i> 1</p> <p>PASSERIFORMES</p> <p>Hirundinidae</p> <p>Barn Swallow* <i>Hirundo rustica</i> 20+</p>	<p>Motacillidae</p> <p>White Wagtail* <i>Motacilla alba</i> 6</p> <p>Grey Wagtail* <i>M. cinerea</i> 11</p> <p>Pycnonotidae</p> <p>Red-vented Bulbul <i>Pycnonotus cafer</i> 8</p> <p>Cisticolidae</p> <p>Ashy Prinia <i>Prinia socialis</i> 1</p> <p>Sylviidae</p> <p>Hume's Leaf Warbler* <i>Phylloscopus humei</i> 5</p> <p>Muscicapidae</p> <p>Verditer Flycatcher* <i>Eumyias thalassina</i> 1</p> <p>Monarchidae</p> <p>Asian Paradise Flycatcher <i>Terpsiphone paradisi</i> 1</p> <p>Emberizidae</p> <p>Red-headed Bunting* <i>Emberiza bruniceps</i> 4</p> <p>Zosteropidae</p> <p>Oriental White-eye <i>Zosterops palpebrosus</i> 10+</p> <p>Oriolidae</p> <p>Golden Oriole <i>Oriolus kundoo</i> 2</p> <p>Dicruridae</p> <p>Black Drongo <i>Dicrurus macrocercus</i> 5</p> <p>Corvidae</p> <p>House Crow <i>Corvus splendens</i> 2</p> <p>Indian Jungle Crow <i>C. culminatus</i> 15+</p>
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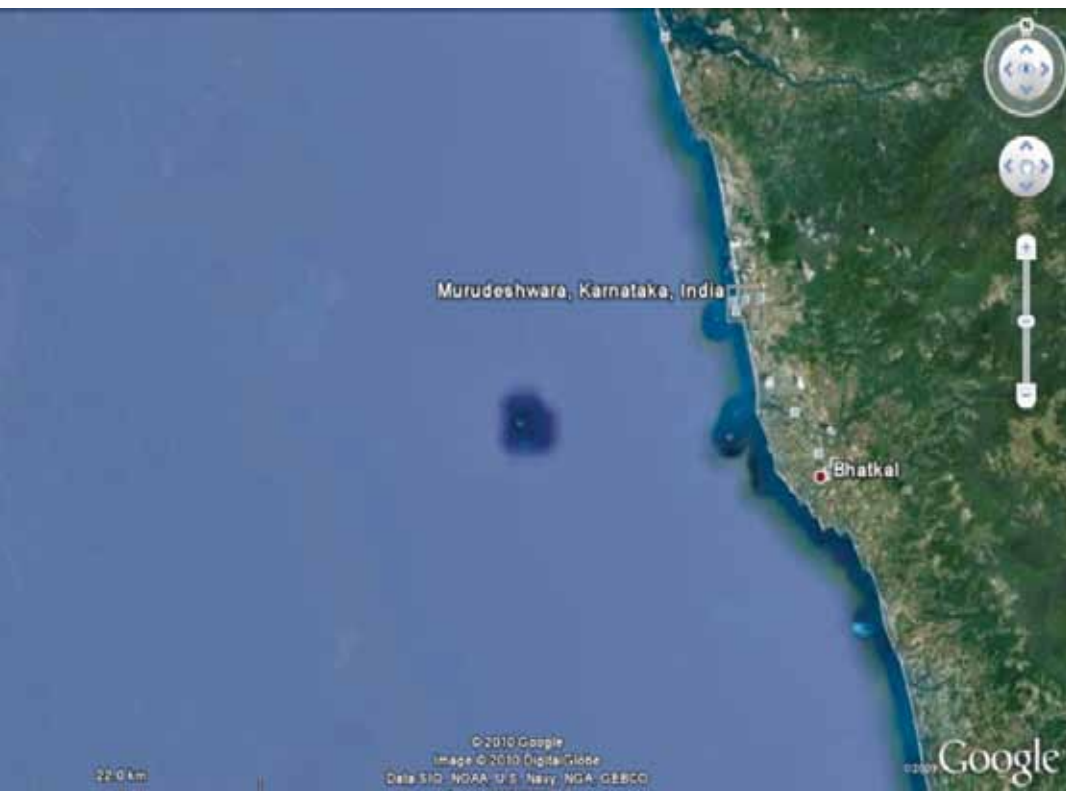


Fig. 1. A satellite image showing the west coast of Karnataka and the Netrani Island. (From Google 2009).