Indian Regional Association for Landscape Ecology

# PANORAMA

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Photo credits: K. Sivakumar

## In Focus: The Islands

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**Introduction:** India's two important island groups are (1) Andaman and Nicobar Islands in the Bay of Bengal and (2) Lakshadweep Islands (Amindivi, Laccadive and Minicoy) in the Arabian Sea. Together they form the tenth biogeographic zone, the Islands. The Andaman and Nicobar Islands are an archipelago of 306 islands, spread over an area of 8249 sq. km, where Andaman Islands have a greater geographical area (6408 sq. km) than the Nicobar Islands (1841 sq. km). The Lakshdweep islands are the smallest with a total geographical area of 32 sq. km. Geologically, the Andaman and Nicobar Islands were created as a result of subduction of Indian ocean oceanic crust under Asian plate, which caused sea floor uplifting and debris accumulation forming a chain of islands.

**Biodiversity:** These islands are home to more than 3,500 species of flowering plants (223 species endemic), 5,100 species of animals (100 freshwater, 2,847 terrestrial, 503 endemic) and 4,500 marine species (of which 220 are endemic), 50 species of mammals (33 species endemic), 240 species of birds (96 endemic) and 110 species of amphibians and reptiles (66 endemic) and 80% of the world's coral diversity. With 105 protected areas including national parks and wildlife sanctuaries, these islands are important habitat for endemic flora and fauna species. The Pitti islands or Bird Island in Lakshdweep group of Islands are important bird nesting site and are protected for conservation signficance. The main forest types are tropical evergreen and semi-evergreen, with good representation of families like Euphorbiaceae, Rubiaceae, Fabaceae, Annonaceae and Verbanaceae. *Pterocarpus* and *Dipterocarpus* sp. are dominant in the Andamans and do not occur in Nicobar Islands. Some of the species endemic to the Nicobar islands include *Cyrtandra*, *Stemonurus*. Nicobar islands however share similarities with Indonesia, while herpetofauna of Andamans are similar to Indo-china.

Many of the invasive alien species on these islands can be traced back to mainland India. For example, species like the Spotted Deer or Chital (*Cervus axis*), Barking Deer (*Muntiacus muntjak*), Hog deer (*Cervus porcinus*) and Sambar (*Cervus unicolor*) were introduced in Andaman for recreation and elephants were introduced for forestry work. Many became invasive later. Invasive species also include some introduced fish species like Mosquito Fish (*Gambusia affinis*), Mozambique Tilapia (*Oreochromis mossambicus*), Silver Barb (*Barbonymus gonionotus*), Red Bellied Pacu (*Piaractus brachypomus*), and Common Carp (*Cyprinus carpio*). The sea grass beds which also act as nurseries for fishes face threat from the fishing nets. Biodiversity on these islands face threat from poaching, conversion of forest to oil palm, rubber and teak plantations, sand mining, and invasive species.

**People:** Only very few of these hundreds of islands are inhabited by indigenous people, and their population also declined over time due to diseases introduced by foreigners. Occupation of these islands by the British and the Japanese, and introduction of the prisoners and labourers, changed the demographics of these islands. However, only 21 out of 325 islands in Andaman group of Islands and 12 out of 23 in Nicobar group of islands are inhabited. Lakshdweep islands have only 11 out of 36 islands inhabited. There are two major tribal groups in Andaman and Nicobar islands- the Negritos in the Andamans and the Mongoloids in the Nicobar. The people of Andaman and Nicobar Islands form six different indigenous tribes- the Great Andamanese, Jarawa, Onge, Sentinelese, Shompen and Nicobarese. Except for the Nicobarese, these groups are protected through Particularly Vulnerable Tribal Groups status. The indigenous people of Andaman speak different dialects of Andamanese language, but Hindi, Tamil, Bengali and Telugu are also spoken.

## This issue

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These people use bow, dogs, nets and canoes for hunting fishes, dugongs, turtles and other animals. The great Andamanese, Jarawa and Onge were originally hunter-gatherers. Nicobarese speak different dialects of Nicobarese language, and some speak Hindi and English as well. Most people on Andaman Islands are engaged in agriculture, growing paddy, coconut, fruits, spices, areca nut, oil palm, rubber. For thousands of years, these tribes have survived in isolation from rest of the world, but recently growing tourism is intrusive to their way of living. The government has restricted photography and videography to restrict tribal tourism and marketing of exoticity.

**Nature-people interface:** The life of people on the islands is intricately linked with both forests and ocean. Many tribes have traditionally worshipped nature and their relationship with nature is the one of harmony. Although some tribes engage in horticulture and agriculture, they largely depend on fishing and hunting for food. Threats to biodiversity such as invasive species, climate change and ocean acidification pose a threat to people's survival as well. In addition, construction material for the houses, canoes and hunting tools also come from their surroundings.

**Explore!**

- Marine and coastal habitats in Indian ocean and across the globe here at Habitat Plus website.
- Oceans and SDGs

**References:**


- People of Andaman and Nicobar Islands
- Life in stills: people of Andaman and Nicobar Islands
- Unique biodiversity of Andaman and Nicobar Islands
- Strategic plan and management of alien invasive fauna in the Andaman and Nicobar islands
- The Lakshadweep : Islands of Ecological Fragility, Environmental Sensitivity and Anthropogenic Vulnerability
- Sustainable management of Protected Areas in the Andaman and Nicobar Islands
- Stakeholder perceptions and strategies for management of non-native freshwater fishes of Andaman and Nicobar Islands, India


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# Seascape level conservation measures to secure future livelihoods and enhance blue economy in India

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The sea around India is part of the great Indian Ocean, and the Indian subcontinent forms a major physical division between the Arabian Sea and the Bay of Bengal of the Indian Ocean. India has a vast coastline of 7,517 km, of which, 5,423 km belong to Peninsular India and 2,094 km to the Andaman, Nicobar, and Lakshadweep Islands, and with an EEZ of 2.02 million sq. km. This coastline also supports a huge human population, which is dependent on the rich coastal and marine resources. It is estimated that nearly 250 million people live within the swath of 50 km from the coastline of India. Therefore, the ecological services of marine and coastal ecosystems of India, play a vital role in India's economic growth.

Despite the tremendous ecological and economic importance India's coastal and marine ecosystems are under threat. Numerous direct and indirect pressures arising from different types of economic development and associated activities are having adverse impacts on coastal and marine biodiversity across the country. Additionally, climate change is likely to have a growing impact on coastal and marine ecosystems, including a likely increase in extreme weather events as well as sea level rise, warming of the sea surface temperatures and ocean acidification. A rise in the sea level is likely to have significant implications on the coastal populations and agricultural productivity.

Few Protected Areas such as Gulf of Mannar MNP, Gulf of Kutch MNP, Jhansi Rani MNP and Mahatma Gandhi MNP were notified as Marine National Park (MNP) as per the Wildlife (Protection) Act, 1972. However, so far no guideline has been issued by the Government of India regarding the notification of Marine Protected Areas. Further, there is no policy in India to notify MPAs outside territorial waters but within EEZ. There are 131 Coastal and Marine Protected Areas (CMPAs) in India. Of these, 25 Protected Areas are present in the Peninsular India, 103 PAs in Andman & Nicobar Islands and four in Lakshadweep Islands. These 25 MPAs cover an area of 6,200 sq.km, which is 3.9% of total area covered under the entire Protected Area Network of India.

Marine Protected Area Network in India has been used as a tool to manage natural marine resources for biodiversity conservation and for the well-being of people dependent on. Scientific monitoring and traditional observations confirm that depleted natural marine resources are getting restored and/or pristine ecological conditions have been sustained in well managed MPAs. Considering the importance of coastal areas in India with respect to prevailing socio-economic perspectives, it would be difficult to add further habitats of coastal and marine biodiversity in the existing Marine Protected Areas Network as a National Park or a Sanctuary. In this connection, the Wildlife Institute of India has identified 107 coastal and marine sites as Important Coastal and Marine Areas (ICMBA) covering a total area of 10,773 sq.km. These sites have been proposed as Conservation or Communities Reserves so that there would be higher level of participation of local communities in governance.

With reference to SDG (14) of UN, Aichi Targets (10 & 11) of CBD and National Biodiversity Targets (6) of Government of India, Indian experts have already identified Angria Bank covering an area of 1300 sq.km as an ecologically or Biologically Significant Area (EBSA) as per the CBD Criteria. Further, Wedge Bank, Palk Bay, Off Coast of Sundarbans and Chilka Lagoon

Photo Credits: Centre for Migratory Species

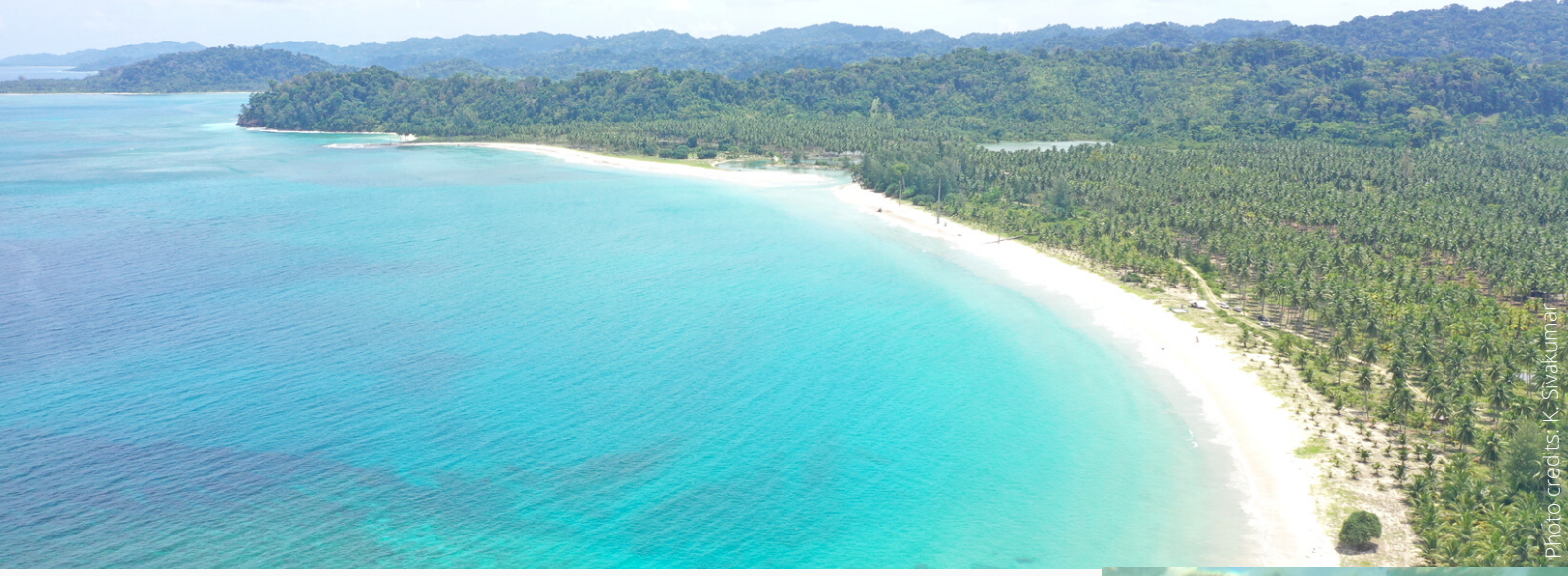
Photo credits: K. Sivakumar

covering an area of more than 30,000 sq.km area have been identified as potential 'Important Marine Mammals Areas (IMMA)' as per the IUCN criteria. Biological resources in both EBSA and IMMAs would used sustainably without harming the endangered species that occur there. But, these areas yet to be accepted by the Government of India.

Mainstreaming biodiversity is the process of embedding biodiversity considerations in fisheries policies, schemes, plans, programmes and projects is key to sustain the habitats which serve as feeding, spawning and nursery sites which are essential for increasing wealth of our country and human wellbeing. India as a UN member has committed itself to implement the 2030 sustainable development agenda. The Sustainable Development Goals are a big step forward for the environment. They recognise the importance of the planet's natural resources – its forests, rivers, oceans and land – for our social and economic wellbeing. Especially, the goal SDG 14 emphasise the importance of inclusive management of coastal and marine resources including fisheries and mainstreaming the biodiversity conservation into the Marine Fisheries Sector. These 131 MPAs and 107 ICMBAs of India would help to achieve SDG 14. IMMA sites identified by IUCN can cover approximately 10% of EEZ of India that would fulfil the SDG 14 provided these IMMA sites are notified either by Indian Maritime Act or existing Wildlife (Protection) Act, 1972 may be amended so that India can notify MPAs in EEZ. Seascape level planning is necessary to secure the migratory routes of marine mammals, sea turtles and critical fish breeding grounds. India must consider marine biodiversity conservation as one of the developmental sector as part of 'Blue Economy Promotion' in India. In this context, having more MPAs in EEZ as some long-term investments to secure future livelihoods.

Newly launched 'Project Dolphins' of India by the Government of India, is envisioned at conserving the most threatened habitat in the sea, by not only addressing the well being of all the stakeholders, but it also respects the equality of all life forms with humans, truly representing the philosophy of 'Vasudhaiva kutumbakam'. Hope for the best.

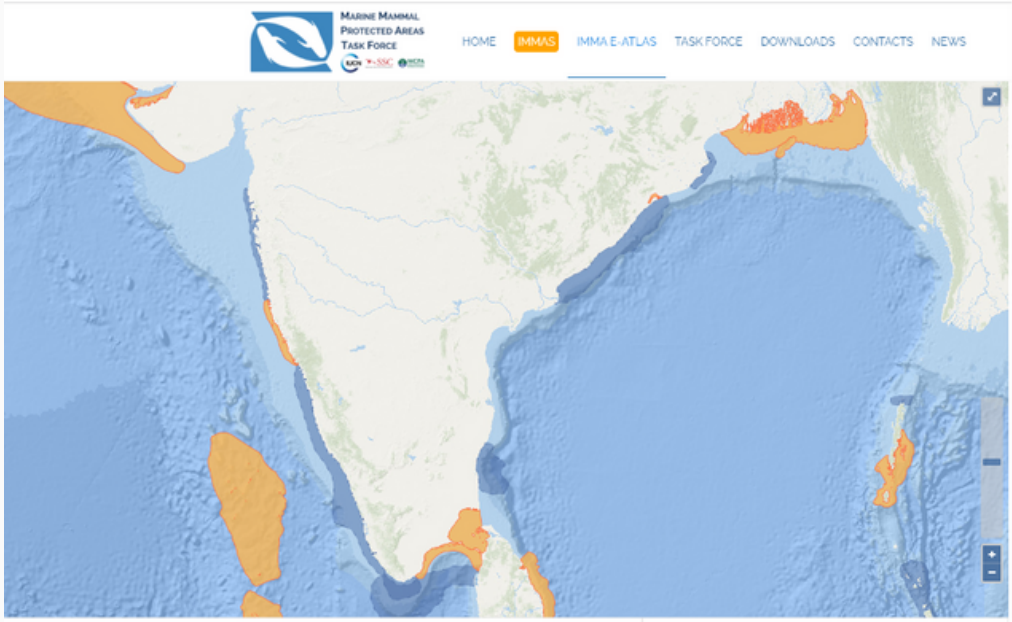

Figure 1: Important Marine Mammals Areas of India (source: https://www.marinemammalhabitat.org)


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# NEWS

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## Ladakh, Andaman & Nicobar to get high speed fiber internet

*Bharti Airtel has launched Airtel Xstream Fiber in Ladakh and Andaman and Nicobar Islands. With this, Airtel claims to be the first private internet service provider (ISP) to roll out Fiber-To-The-Home (FTTH) broadband service in these remote geographies. Airtel Xstream Fiber's is currently available to customers in Leh in Ladakh & Port Blair in Andaman and Nicobar Islands.*

Read more here

## The Great Blue Wall Initiative: At the nexus of climate change, nature conservation, and the blue economy

**Nassim Oulmane** and **Thomas Sberna** · Thursday, June 23, 2022

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# Membership Renewal

Requesting members whose membership ended last year or before but was extended until 2021 to kindly visit the page to renew it at the earliest. Those who became member last year (2021) will have their membership until one year from the date of registration.

Members can now choose between annual and term membership based on their interest.

| Membership type | Tenure | Membership Fee (INR) |
|---|---|---|
| Student | Annual | 1000 |
| | Term (3 Years) | 2500 |
| Regular | Annual | 2000 |
| | Term (3 Years) | 5000 |
| Institutional | Annual | 10000 |
| | Term (3 Years) | 25000 |

# Opportunities

### Climate leadership programme, Tamil Nadu edition | Sustera Foundation

Last date to apply 30 June 2022 | Find more here

### Job opportunities in Ecosystem-based Adaptation for resilient incomes in India | WOTR

Last date to apply 08 July 2022 | Find more here

### Call for application: Climate Action Champions Network | ORF

Last date to apply 15 July 2022 | Find more here

### Call for application: Graduate Student Research Awards 2022 | Society for Conservation Biology

Last date to apply 1 July 2022 | Find more here

### Internship: Youth in Landscapes Network Intern | Global Landscape Forum

Last date to apply 10 July 2022 | Find more here

## Article of interest

Land Degradation and Desertification – Action Points for India from UNCCD's Global Land Outlook Report 2022 | Anagha Gore. Read here

## Open access book

Land Use Cover Datasets and Validation Tools, Validation Practices with QGIS
Editors: David García-Álvarez, María Teresa Camacho Olmedo, Martin Paegelow, Jean François Mas
https://link.springer.com/book/10.1007/978-3-030-90998-7