



BIODIVERSITY OF ANDAMAN AND NICOBAR ISLANDS: A TREASURE TROVE OF ECOLOGICAL DIVERSITY

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ABSTRACT

Our country is endowed with a diverse range of flora and fauna. Andaman and Nicobar, as a hotspot of biological diversity, deserves our attention. The total land area of these islands is only about 8249 square kilometres, 86% of which is covered by lush green rain forests. These islands include a large collection of vegetation. About 52 species are used by Aboriginal subgroups. About 246 of the nearly 2500 angiospermous species that have been identified as existing on these islands are indigenous. More than 1,500 plant species on the Indian subcontinent are in danger of going extinct, and the majority of them are indigenous. As a result, sufficient efforts are required to preserve this priceless biodiversity and to allow for its sustainable usage.

INTRODUCTION

The Andaman-Nicobar archipelago is considered a true paradise of plant biodiversity. Located between two of his major biodiversity hotspots, the Indian subcontinent and the Malaysian-Indonesia region, the islands boast an extraordinary range of biodiversity within a limited geographical area. Geographically, these islands are part of a long arc of islands stretching from the Arakan Yoma Mountains in Myanmar to the Sumatra Mountains in Indonesia. The unique location of these islands between two major biodiversity regions results in an unparalleled distribution of plants representative of the flora of India, Myanmar, Thailand, Malaysia and Indonesia. Being located between two major biodiversity hotspots, the Indian subcontinent and the Malaysia-Indonesia region, it is not surprising that the islands exhibit biodiversity of extraordinary range within a limited geographical area. The biodiversity of these islands includes medicinal plant resources, indigenous orchids, agro biodiversity, and economically important plant species such as timber yielding plants.

- **Biodiversity of medicinal plants of the Andaman and Nicobar Islands**

India is a vast treasure trove of medicinal plants, with nearly 25000 plants known to have medicinal value. Andaman and Nicobar Islands are also one of the hotspots for rich plant biodiversity, with medicinal plants playing an important role. The ethnography of the Bay Islands involves a wide variety of products derived from the surrounding flora and fauna. Several studies have shown that a large number of plant species are used by the ethnic tribes and locals of the Bay Islands for their various medicinal properties, for example species such as *Alstonia macrophylla* *Morinda citrifolia* is used in the treatment of stomach pain, joint pain and fractured bones.



- **Diversity of marine fauna in the Bay Islands**

The Exclusive Economic Zone (EEZ) around the Andaman and Nicobar Islands is vast and covers a sea area of 0.6 million square kilometers, equivalent to 30% of India's EEZ. Geographically, the Bay Islands are near to the Indo-Malayan region and have the status of an archipelago, which is supposed to have contributed to the great biodiversity of the A & N Islands. Few studies have been done on the marine fauna of the Bay Islands, therefore nothing is known about their endemism or how they have evolved as an isolated community. Nevertheless, the available literature indicates that many of the marine fauna of these islands are similar to those of the Indo-West Pacific. Marine habitats are extremely diverse and vast, with diverse fauna ranging from microscopic plankton to very heavy whales.

- **Native orchid species**

Orchids are undeniable plants, expensive in the international florist trade because of their elaborately designed spectacular flowers, vibrant colors, attractive appearance, myriad sizes and long-lasting quality. Orchids represent the most evolved family of Orchidaceae among the Cotyledons. Orchid flowers have emerged as the market leader and have made significant contributions to the economies of various countries. The Andaman and Nicobar Islands have about 110 natural species, of which about 25 are endemic. Some species are even classified as endangered and rare. Therefore, it is extremely important to collect and store them at this stage.

- **Rice Genetic Resources of Bay Islands**

Rice is the main cereal crop of the Andaman and Nicobar Islands. Out of a total of 19,901 hectares of arable land, rice alone accounts for 12,000 hectares. Much of the rice acreage in the Andamans is due to the tall, traditional C14-8 variety, which is extremely long and light-sensitive. There are about 11 varieties of rice grown on these islands, but literally, the rice varieties we call local, have been introduced from elsewhere at different elevations of time. These are truly adaptive genotypes that have withstood years of selection pressure in these humid tropics. Except for the recently discovered new species, *Oryza indandamanica* Ellis from Rutland, there are very few wild species on these islands. Eleven different strains/varieties of *Oryza sativa* collected so far are recorded in the current database along with the native wild species *Oryza indandamanica* Ellis.

- **Insects of Andaman & Nicobar Islands**

The Andaman and Nicobar Islands have a rich fauna of insects, most of which, like other parts of the tropics, are still unknown. According to Zoological Survey of India, 1500 to 2000 species of insects have been discovered on these islands so far. These islands are home to a wide variety of insects, including the swallowtail swallow (*Lepidoptera: Papilionidae*) which is the most studied butterfly family. Three of the endemic Swallowtail butterflies are found on these islands. The Andaman and Nicobar Islands rank 16th out of 51 countries in the world that are important Swallowtail habitats. Likewise, all six of his species of wild silkworms are known from these islands. All islands need further study to reveal the many other insect populations that have yet to be discovered in the forests of these islands. The insect species listed in this database were selected for their uniqueness, rarity, and economic importance.



- **Livestock and poultry biodiversity**

Cattle, buffalo, goats, pigs, poultry, a few horses, and rabbits are the main types of livestock on these islands. Out of 36 islands, 12 have no livestock at all, while the remaining 4 have a population of fewer than 200 people. In the Andaman group of islands, the North, South, and Middle Andaman have the largest concentrations of cattle, while Car Nicobar and Katchal are the areas with the highest concentrations in the Nicobar group of islands. In the Andaman group of islands, cow, buffalo, and goat are the most common livestock species, whereas pig and goat are more common in the Nicobar Islands. This distribution clearly shows the eating habits of the residents of the two regions.

- **Seaweed resources of Andaman and Nicobar islands**

Seaweeds are macroscopic algae that are an important component of marine living resources. They are mostly found in the intertidal zones of the sea where suitable substrata for growth are available. Seaweeds are used as foods, fodder, fertilisers, and have many applications in many industries. Aside from these, they are good sources of protein, iodine, vitamins, minerals, and antibiotics. A survey of the seaweed resources of the Andaman and Nicobar Islands revealed that approximately 55 species of seaweeds are available in various parts of these islands.

- **Underutilized fruits of Andaman**

The Andaman and Nicobar Islands have a wide variety of wild, unused tropical fruits, many of which are of evolutionary climate in specific niche. Most of these fruit trees remain semi-domesticated, but many species are rare and endangered due to extensive urbanization. These underutilised fruits, despite having nutritional and commercial medicinal value, have yet to be fully utilised. Despite the fact that these underutilised fruits contain all of the essential ingredients of our diet, they are not recognised as an important source of minerals and vitamins. These biodiversity-rich islands are full of underutilized fruit, but information on nutritional value is not available to everyone.

- **Timber plants of Andaman & Nicobar Islands**

More than 200 timber species are abundant in the Andaman forests, of which about 30 are considered commercial. The most important wood species are Gurjan (*Dipterocarpus* species) and Padauk (*Pterocarpus dalbergioides*). The following are the names of some trees found in Andaman:

1. Padauk (*Pterocarpus dalbergioides*),
2. Silver Grey (a special formation of wood in white chuglam)
3. Marble Wood (*Diospyros marmorata*)
4. Kokko (*Albizia lebbek*)
5. Chooi (*Sageraea elliptical*)

Padauk is more stable than teak and is commonly used in furniture production. Burr and the Buttress formation in Andaman Padauk are well known around the world for their incredibly distinctive beauty and figure. The largest part of the buttress known from the Andaman was the 13' x 7' dining table. The largest burr was a dining table for eight people at a time. The sacred Rudraksha (*Elaeocarps sphaericus*) and aromatic Dhoop/Resin trees grow here as well.



CONCLUSION

The Andaman and Nicobar Islands are a treasure trove of ecological diversity. The islands are home to a large number of endemic species of plants and animals, many of which are endangered. The islands' unique biodiversity has led to the establishment of several protected areas and conservation organizations. It is important to continue efforts to conserve the islands' biodiversity to ensure that this unique ecosystem is preserved for future generations.

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