UNDERSTANDING THE BIODIVERSITY OF UMANANDA: THE SMALLEST RIVER ISLAND OF THE WORLD

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Abstract

A biodiversity survey is performed in Umananda Island, the world's smallest river island located in the mighty Brahmaputra River in Assam. It is an ecotourism and religious destination with Umananda Temple located in the middle of the island surrounded by floral diversity. More than 25 species are recorded in the island during the series of transect walks conducted during January to March 2019. It was known as Peacock Island among the British Colonists who named it so in view of its shape. In recent years, the frequency of natural degradation has increased including river bank erosion; flooding etc. affected the island biodiversity. Artificial degradation include pollution due to tourist influx, plastic pollution etc. Golden Langur is the keystone animal species of the island whose origin in the island is unknown. Further investigation of faunal diversity in the island is needed in coming times.

Keywords : Umananda, biodiversity, river island, Golden langur

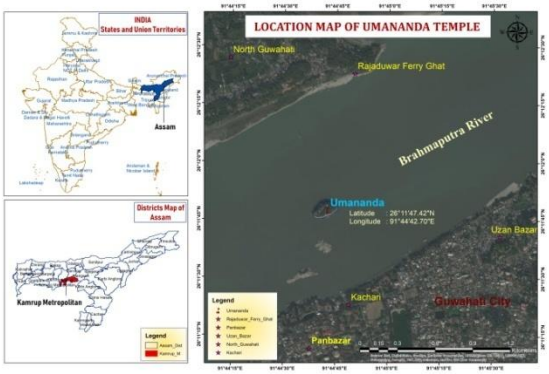

Fig 1 Map of Umananda Island

The smallest waterway island on the planet, Umananda Island is a place with legends galore, a place where man and the wild co-propensity in peace and quietness. Umananda Island lies at the core of the Mighty Brahmaputra River which moves through the center of the city of Guwahati. It was known as Peacock Island among the British Colonists who named it so in view of its shape. The Island is home to an extremely uncommon and imperiled species which are thought to be exceedingly sacrosanct among the general population. The significant fascination

of the island is the Umananda Devi Temple which is committed to Lord Shiva and sees an extensive inundation of enthusiasts amid religious celebrations. The smallest river island maintains a steady weather with summer temperatures ranging between 20°C to 30°C and winter temperatures ranging between 10°C to 15°C.Legend has it that Lord Shiva lived here much to the *ananda* or joy of his consort Uma, another name for Devi *Parvati*. Hence, the name 'Umananda' is derived. There is no dearth of reasons that make Umananda unique but none is, perhaps, as significant as its uncanny ability to sustain one of the most endangered species of primates - the golden langurs. Gee's golden langur (*Trachypithecus geei*), or simply the golden langur, is an Old World monkey found in a small region of western Assam, India[1,2] and the neighboring foothills of the Black mountains of Bhutan[3]. It is one of the most endangered primate species of India[4]. The golden langur was first brought to the attention of the western world by the naturalist E. P. Gee in the 1950s.[5,6]

The existence of the species in the island is connected with a popular folklore which says that two youth left a pair of these langurs here some 35 years ago and they have since survived. The species, otherwise hostile, has adapted to human beings especially the tourists and pilgrims who frequent the island. They are social animals and live in groups. Golden langur populations in Assam are isolated and restricted to just pockets of suitable habitat as in Umananda islands. Their forests face severe human pressure mainly due to illegal logging, hunting, and widespread invasion for both commercial interests and by displaced refugees[7]. The island biodiversity of Umananda is under serious threat due to pressures of religious tourism and increasing frequencies of extreme climate events such as floods in recent years. The absence of proper solid waste management program is also taking a serious toll on the biodiversity as well as the langur populations of the island.

A study published in open access e-Journal Earth Science India in 2010 states that riverine islands of Brahmaputralike Majuli; the largest river island of the world and Umananda has suffered extensive erosion from 1966 to 2008. The mean annual rate of erosion over the four decades was 8.76 km^2/year. But the intensity of erosion from 1998-2008 was much higher than that of the period from (1966-1975) to 1998 due to the shifting of the backline of the Brahmaputra towards the north. This indicates that the threat to the existence of the island has increased in recent years.Brahmaputra is widening at an alarming rate. During the first survey (1912-1928), the total river area was 3870 sq.kms which has increased to 4,850 sq.kms. During the third surveyconducted by NESAC in 2006; the river area has increased to 6080 sq.kms. These figures indicate that the river area increased by around 50% by the way of river bank erosion. The annual average loss of land is nearly 8500 ha[9]. The increasing rates of river-bank erosion are taking a toll on river islands along Brahmaputra such as Umananda and Majuli. The biodiversity of the island is also getting affected.

Umananda Island being at the confluence of two separate ecosystems represent a transition zone or ecotone. The island biodiversity is majorly tropical monsoon type at par with rest of the mainland's climatic type. The river island mainly consists of lowlands, swamps, riverine sand-flats, tributaries, channels and wetlands. A complete inventorization of plant and animal diversity of Umananda Island is carried out through transect walk across the length and breadth of the island as well as with the help of locals.

Umananda is one of most ecologically unique smallest river island of the world that stands on the confluence of ecology and religion. The amazing Lord Shiva temple bears a testimony to the fact. The small island portrays panoramic natural beauty and tropical biodiversity. However, detailed spatial as well as temporal analysis is needed to understand the natural as well as anthropogenic stresses faced by the island in recent timescapes. The current record is a stepping stone in that direction.

Clockwise from left:

a. Entrance way towards Umananda Temple.
b. Entrance waterway of Umananda Island
c. View of the island from the ferry ghat side
d. Bamboo tree species in Umananda island. Bamboo is a very common species in the riverine island.
e. Rock formations and associated vegetation in the island.
f. Fruit tree species- ideal habitat for langur populations of the island

1. Bel- *Aeglemarmelos* (big tree, several numbers)
2. Tulsi- *Ocimum sanctum*
3. Amloki- *Phyllanthus emblica*
4. Sephali- *Nyctanthes arbor-tristis*
5. Ahot-*Ficus religiosa* (big tree, several numbers)
6. Joba- *Hibiscus rosa sinensis*
7. Mouz (Sycamore)–*Litsea glutinosa*
8. Balam Kheera- *Kigelia africana*
9. Krishnachura- *Delonix regia*(In several numbers)
10. Udal or Elephant Rope Tree- *Sterculia villosa*
11. Tetuli- *Tamarindus indica* (Many, big trees)
12. Khejur or Date Palm-*Phoenix dactylifera* (two trees)
13. Segun- *Tectona grandis*(many large trees)

14. Hilikha or Haritaki –*Terminalia chebula*(big tree)
15. Coconut- *Cocos nucifera* (two trees)
16. MahaNeem- *Azadirachta indica*
17. Papaya- *Carica papaya L*(many trees)
18. Kothal- *Artocarpus heterophyllus*(many trees)
19. Bamboo- *Bambusa tulda* Roxb.
20. Champa- *Magnolia champaca*
21. Jamum-*Syzygium cumini*
22. Modar or Madar tree- *Calotropis gigantea*
23. Naezee/Ganda or Pot marigold- *Calendula officinalis*
24. Dhatura –*Datura stramonium L*
25. Mango- *Mangifera indica*

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