



World Heritage Day

Geo-Tourism Sites in North-Eastern States of India

Theme: "Heritage and Climate"

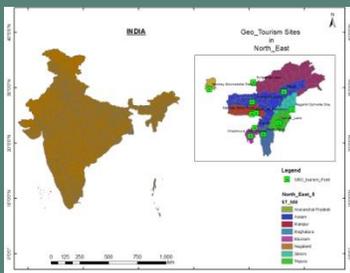
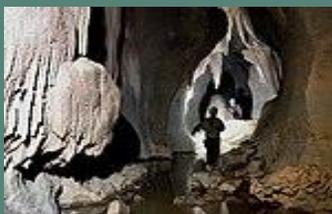


Fig. Geo_tourism sites in North-east India

Mawmluh cave



Cave belongs to Meghalayan Age, which is a major abrupt climatic event with critical drought and cooling 4,200 years ago which was determined from a stalagmite from Mawmluh cave. In the geologic time scale, the Meghalayan is the latest age or uppermost stage of the Quaternary.

Mawblei God's Rock



A megalith, Mahadek sandstone of Khasi group of cretaceous period, inclined at 45 degrees on a slope of a hill of Wahrashi River valley is a sacred site for Khasi people.

Therriaghat



Fig.5 Near K/T boundary exposure, Therriaghat

The Geological Survey of India (GSI) North Eastern Region (NER) installed 2 geological display boards at 2 important geological sites with geo-scientific information. The sites are Mawmluh cave and Therriaghat cave in Meghalaya. The prime objective of this was to create awareness among students, visiting tourists and the general public and will also help to conserve the site and aid the upcoming generations to be aware of such geological developments. The geological display boards are unveiled at Mawmluh cave and Therriaghat at Sobhar in East Khasi Hill District. Um-Sohryngkew (Wahrew) river section at Therriaghat is known for having most complete records of Cretaceous-Palaeogene (K-Pg) boundary transition in India. It marks Cretaceous (K)-Palaeogene (Pg) mass extinction event. It also has high level of iridium metal from boundary marking catastrophic event when giant meteorite hit the earth. Most of large vertebrates such as plesiosaurs, dinosaurs, mosasaurs and pterosaurs on earth, most plankton and many tropical invertebrates had suddenly become extinct at end of Cretaceous period. At about the same time, Earth was hit by giant meteorite causing very high values of iridium metal in contemporary rock record.

Source: Laishram Sherjit Singh, K. Singh (2018) *Geology, Structure and Tectonics of Shillong Plateau*. *Geology Journal of emerging technologies and innovative research*

Majuli



Majuli (mazuli) is a river island in the Brahmaputra River, Assam and in 2016 it became the first island to be made a district in India. It had an area of 880 square kilometres (340 sq mi) at the beginning of the 20th century, but having lost significantly to erosion it covers 553 square kilometres (214 sq mi) as at 2014. Majuli has shrunk as the river surrounding it has grown. The island is formed by the Brahmaputra River in the south and the Kherkutia Xuti, an anabranch of the Brahmaputra, joined by the Subansiri River in the north. Majuli island is accessible by ferries from the city of Jorhat. The island is about 300–400 kilometres (186–249 mi) east from the state's largest city Guwahati. It was formed due to course changes by the river Brahmaputra and its tributaries, mainly the Lohit. Majuli is the abode of the Assamese neo-Vaishnavite culture. Majuli is since 2004 in the UNESCO Tentative List for nomination as a World Heritage Site.

Umananda Island



Umananda Island is the smallest inhabited river islet in the middle of river Brahmaputra, flowing through the city of Guwahati in Assam, a state in northeast India. Its name derives from Assamese Uma, another name for the Hindu goddess Parvati, the wife of Shiva; and ananda, which translates to "joy". A British officer named the island

Peacock Island for its structure, which he thought resembled the splayed feathers of a peacock. It is also known as Bhasmachal, from the words bhasma, meaning 'to destroy', and chal, meaning 'place'. The legend giving rise to this name is that Kamdev, the god of love in Hindu mythology, after interrupting Shiva in the middle of a deep meditation on the islet, was burnt to ashes. It is mostly visited for its Shiva temple, the Umananda Temple, and was also home to a large population of golden langurs, an endangered species of primate.

Chabimura



Chabimura or Chobimura also known as Chakwrakma or Chakrakma is famous for its panels of rock carving on steep mountain wall on the bank of Gomati river in Indian state Tripura. There are huge carved images of Shiva, Vishnu, Kartika, Mahisasura Mardini Durga and other Gods and Goddesses. It is situated on the bank of Gomati river at Haakwchak or Haakchak Amarpur subdivision under Gomati district, 82 km away from main city and capital Agartala, Tripura, India, 30 km away from Udaipur and 7.5 km away from Amarpur.

Unakoti



Unakoti is a hill from which the name of Unakoti District is derived. The Kokborok name of Unakoti is Subrai Khung as claimed by Jamatia Hoda; Unakoti hill literally means one less a koti in Hindi and Bengali, hosts an ancient Shaivite place of worship with huge rock reliefs celebrating Shiva. It is the prime

tourist spot of Unakoti District, Tripura in the Kailashahar Subdivision in the North-eastern Indian state of Tripura. It is Shiva pilgrimage and dates back to unknown era.

Sangeststar Tso



The **Sangeststar Tso**, formerly called Shonga-tser Lake and popularly known as the Madhuri Lake, is located on the way from Tawang to Bum La Pass in Tawang district of Arunachal Pradesh, near Indo-China border above 3,708 metres (12,165 ft) above sea level. The Taktsang Chu river that originates below the Takpo Shiri glacier to the north, flows through this region. It flows west and then southwest to join the Nyamjang Chu river 8 miles (13 km) downstream. The Taktsang Gompa is within the area, 1.5 miles (2.4 km) to the west.

The Sangesstar Tso was created by falling rocks, boulders and trees in an earthquake.

It is a fantastic place for a picnic of a lifetime if you move out of Tawang by around 7am and carry in everything yourself.

Visit by civilian tourist of India is permissible with permission from the Indian Army. The track is very treacherous, only SUVs advisable, and that too only on clear weather day with no snowfall or rainfall.

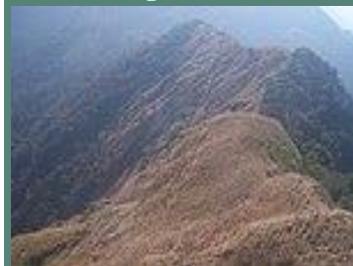
Loktak Lake



Loktak Lake is the largest natural freshwater lake (ancient supervolcanic caldera) in India. It is a pulsating lake, with surface area varying from 250 sq km to 500 sq km during rainy season with a typical area of 287 sq km. The lake is located at Moirang in Manipur state, India. The etymology of *Loktak* is *Lo* k = "stream" and *tak* = "the end". It is famous for the phumdis (heterogeneous mass of vegetation, soil and organic matter at various stages of decomposition) floating over it. The largest of all the phumdis covers an area of 40 km² (15 sq mi) and is situated on the southeastern shore of the lake. Located on this phumdi, Keibul Lamjao National Park is the only floating national park in the world. The park is the last natural refuge of the endangered Sangai (state animal), *Rucervus eldii eldii* or Manipur brow-antlered deer (*Cervus eldi eldi*), one of three subspecies of Eld's deer.

Loktak Day is observed every year on the 15th of October at the periphery of the Loktak lake.

Reiek Tiang



Reiek is a mountain and tourist spot 29 km from Aizawl, Mizoram, India. It rests at an elevation of 1,465 metres overlooking Aizawl and offers a view of the surrounding valleys and hills. On a clear day, the plains of Bangladesh can be seen from the top of the hill. Reiek Hill is surrounded by thick lush green temperate trees and bushes.

Reiek Tiang is a cuesta (a hill with a gentle slope on one side and a steep

slope on the other) created by erosion of the tertiary sand shale alterations.

Nagahil Ophiolite Site



Fig. 3.1 Bird's eye view of ophiolite, Shiloi Lake, Nagaland

Naga Hills Ophiolite (NHO) has been adopted because of the large exposures, better defined geological sections and presence of complete lithological assemblage in Nagaland compared to its southern counterpart in Manipur where the ophiolite belt splits into thin slices of limited lithological variation (cumulate and spilite). The ophiolitic rocks of mantle and oceanic crust parentage at the continental plate margin have vast potential for intensive research and economic growth. The NHO consists of a variety of Mesozoic and Cenozoic magmatic, metamorphic and sedimentary rocks that originated at the India-Myanmar convergent plate boundary.

The NE-SW trending Naga Hills constitute the northern part of Indo-Myanmar Ranges (IMR) in the northeastern Indian states of Manipur, Nagaland, parts of Arunachal Pradesh and the adjoining areas of western Myanmar. The central part of this hilly range is known for the occurrence of ophiolite as a narrow arcuate body. **SOURCE:** N. C. Ghose et al., A Petrographic Atlas of Ophiolite, DOI: 10.1007/978-81-322-1569-1_3, © Springer India 2014.

Source: N. C. Ghose et al. 2014

Mamley Stromatolite Park



Also called "Buxa Formation of Mamley", is Algal_mat Stromatolites Stromatolite Algal mat with circular structures in the limestone of Proterozoic Buxa Formation microbiota microfossils of Ranjit Window is rare examples of early life on earth in the Sikkim Himalayas.

Source: National Geological Monuments of India

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