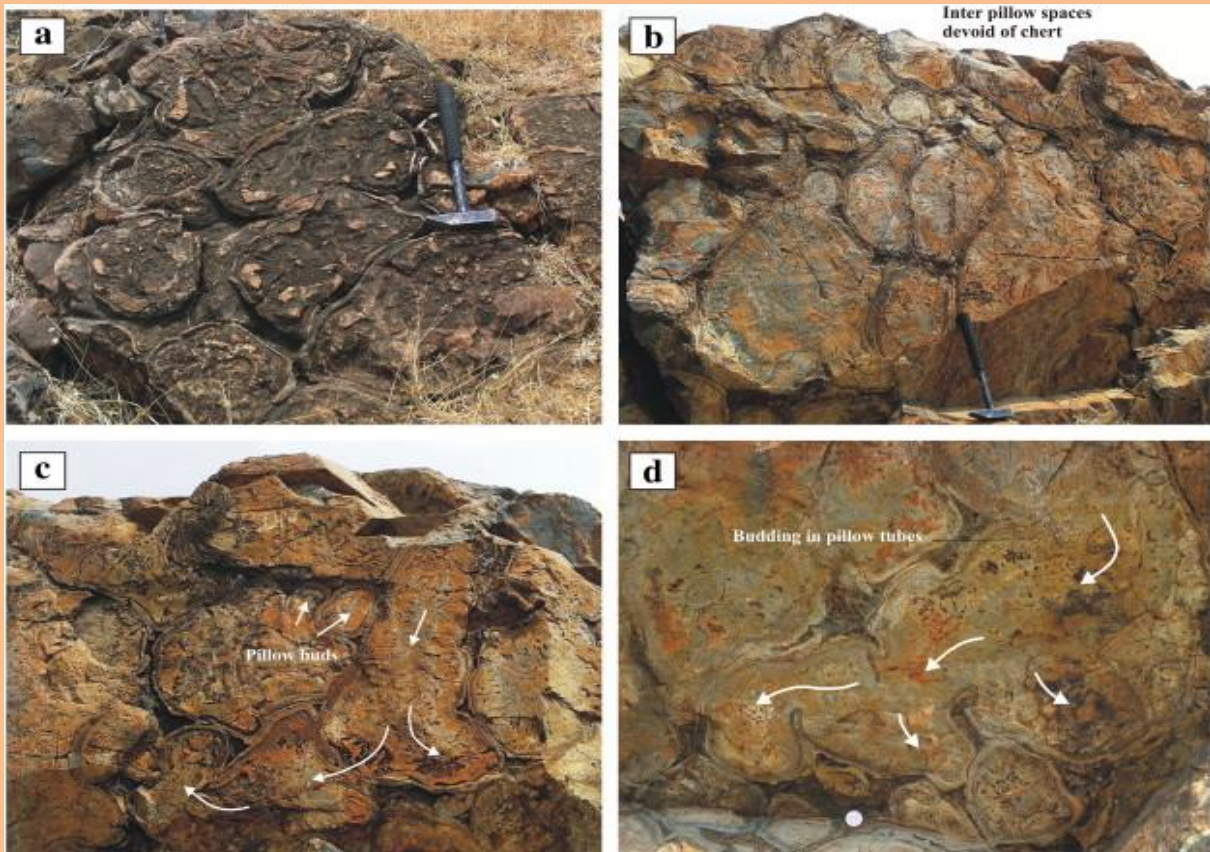




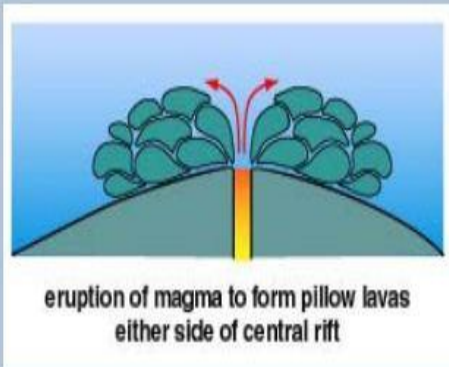
INTACH

## Geoheritage Sites

### **Pillow Lava, Maradihalli, Chitradurga District, Karnataka**



Geological monuments are considered as areas of national importance and heritage of the country. The unique geological features have witnessed the rise and downfall of several civilizations and therefore are important in tracing earth's history through ages. It provides a narrative of earth's evolution and formation and is embodied with significant scientific, cultural, educational or historical value. Geology and landscape have influenced and played a key role in shaping societies and cultures. Geo- Heritage sites offer both scientific and aesthetic interests. But there have been cases of rapid deterioration due to natural hazards, climate change and other activities making these geological monuments more vulnerable and thus, the protection, maintenance, promotion is important. Some of these geosites have been declared and identified as



Formation of pillow lava:

- ❖ Hot Lava Spills out like globules of oil,
- ❖ Contact with cold sea water freezes the lava,
- ❖ Resulting into the globular shape

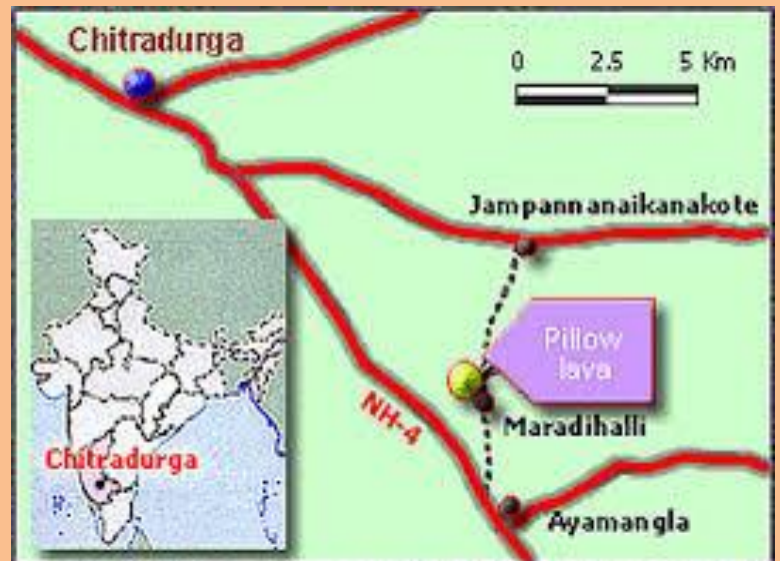
Source : classroom@sea.net

National Geological Monuments of India by Geological Survey of India (GSI). Most of these are in geologically rich states like Rajasthan, Odisha, Karnataka, Andhra, Telangana and Tamil Nadu.

Pillow lavas are bulbous, spherical, or tubular lobes of lava. They are formed during eruptions with relatively low effusion rates. Pillows often have lineation or scrape marks on their sides that are formed during extrusion. Pillow flows are produced by the piling up of individual pillow lava lobes. Pillow lavas are formed when hot lava flows into

water and cools rapidly, creating long tubes and bulbous pillow-shaped mounds of rock. Pillow lavas are found not only in the ocean but also under glaciers that overlie volcanoes. The present of pillow lavas are classic geological indicator that the area was once under water.

The Pillow Lava in Maradihalli is 16 km southeast of Chitradurga town of Karnataka and 4 km north of Ayamangala village, on the NH-4 (Bangalore- Pune). The area is approachable by road via Ayamangala which is about 180 km from Bangalore. “The pillows from Maradihalli occur as spheroid to elongate units with smooth, spall, or wrinkled surfaces with vesicular interiors. Repeated budding of larger pillows has produced a series interconnected pillow unit indicating fluid lava that was emplaced on steeply dipping flanks, under submarine conditions.” This Pillow Lava has been dated 2500 million years. It is one among the 26 National Geological Monuments of India (GMI) and is maintained by the Geological Survey of India (GSI). It is one of the best-preserved Pillow Lava surviving in the world. The pillow lava provides an important clue to the evolution of Precambrian peninsular India. The pillow Lava in Maradihalli is one of the 4 GMI sites in Karnataka, the others are located at Lalbagh (Bangalore), St Mary’s Island (Udupi) and Peddahalli (Kolar).



The site is not protected or fenced and is vulnerable to human activities. Therefore, protection and preservation of this geologically important site is very important. One of the first important steps is to create awareness about its importance and preservation among local villagers living around the area; also aid in management of the site. Proper explanatory signages should also be provided so that it helps visitors and others to understand the importance of the place and the monument.

**Activity**

1. Name some agencies working for the protection of geo-heritage sites across globe.

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2. Name some of the Geoheritage Sites in India.

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3. Find out another example of Pillow Lava in India.

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4. Mention some important steps of popularizing these Geoheritage sites and how one can preserve it.

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**References-**

<http://naturalheritage.intach.org/wp-content/uploads/2016/09/Geoheritage-Monograph.pdf>

<https://www.sciencedirect.com/science/article/abs/pii/S0377027313002369>

<https://www.teamgsquare.com/2013/08/pillow-lava-worlds-oldest-rocks.html>

<http://thegeologieonthemove.blogspot.com/2014/05/pillow-basalt-lava-structures-of.html>