

## Geoheritage Value of Ram Setu

### Why in news?

Recently, the Supreme Court gave the Centre four weeks' time to file a response clarifying its stand on a plea by former Rajya Sabha MP Subramanian Swamy seeking national heritage status for the 'Ram Setu'.

### What is the Ram Setu?

- Ram Setu or Adam's Bridge is a linear coral ridge that separates the shallow sea consisting of the Gulf of Mannar in the south and Palk Bay in the north.
- It runs between Rameswaram in Tamil Nadu and Thalaimannar in Sri Lanka.
- Like the Great Barrier Reef, the Ram Setu is also a continuous stretch of limestone shoals.



### How was the Ram Setu formed?

- In 2003, space-based investigations using satellite remote sensing imagery, by the Space Applications Centre in Ahmedabad, concluded that Ram Setu is **not man-made**.
- But the Ram Setu comprises 103 small patch reefs lying in a linear pattern with reef crest, sand cays and intermittent deep channels.
- Cays or keys refer to low-elevation islands situated on surfaces made of coral reef.
- Thus, it is reasonable to assume that Ram Setu is a **linear ridge made of coral reefs** and forms a shallow part of the ocean that is being constantly impacted by sedimentation processes.
- During a global glaciation period that began around 2.6 million years ago and ended 11,700 years ago, the Indian coast, including parts of the Sethusamudram, may have been raised above water.

- The coral polyps could once again have grown higher on the newly submerged platforms. And in time, the platforms may have been used by migrants to cross oceans.

### What is the Sethusamudram Ship Channel Project?

- The story of the Sethusamudram Ship Channel Project (SSCP) can be traced back to the British, who proposed creating a channel to link the Palk Strait with the Gulf of Mannar.
- But it was only in 2005 that the project was inaugurated.
- Under the project, an 83-km-long deep water channel was to be created, linking Mannar with Palk Strait.
- It will be created by extensive dredging and removal of limestone shoals.
- If completed, the SSCP is expected to reduce the navigation time between the east and west coasts of India.

### What are the concerns about the project?

- Though the CSIR-NEERI ruled out any serious environmental risk and certified the feasibility of the project, concerns have been raised on the stability of the proposed channel and its environmental impact.
- Computer models suggest that the central, eastern and north-eastern parts of the Palk Bay may be impacted by **waves of higher energy**.
- This means that these areas also receive more sediment, rendering them more turbid.
- The area is also vulnerable to **cyclonic storms**. Cyclonic storms can cause the local sedimentary dynamics to go haywire.
- Finding safe places for dumping dredged material without harming terrestrial or marine ecosystems is therefore a big challenge.
- **Emissions from ships** traversing the narrow channel will pollute the air and water.
- And if a ship carrying oil or coal is grounded or strays from its course within the canal, it could cause an ecological disaster.
- Other than the environmental groups, religious groups have been opposing it as they believe that the structure, which is mentioned in the Ramayana, is of religious significance.

### Why is there a need for protection?

- The coral reef platforms between Thoothukudi and Rameswaram in the Gulf of Mannar were notified as a marine biosphere reserve in 1989.
- More than 36,000 species of flora and fauna live there, flanked by mangroves and sandy shores which are considered conducive for turtles to nest. It is also a breeding ground for fish, lobsters, shrimps and crabs.
- This area is already threatened by discharge from thermal plants, brine run-off from salt pans, and illegal mining of corals.
- The SSCP, if it becomes a reality, will be the final blow to this sensitive environment and to the livelihoods of the people there.

### What is the geoheritage perspective?

- While considering this issue from a believer's point of view, it is also important to consider this feature from a 'geoh heritage' perspective.
- The geoh heritage paradigm is used in nature conservation to preserve the natural diversity of significant geological features.
- The geodiversity, consisting of varied landforms and features representative of dynamical natural processes, is under threat from human activities and needs protection.
- The natural heritage of a country includes its geological heritage.
- The value of abiotic factors like geology, soils and landforms is also recognised for their roles in supporting habitats for biodiversity.
- The Ram Setu carries the unique geological imprints of an eventful past.

*Ram Setu needs to be preserved not just as a national heritage monument, but also as a geoh heritage structure as defined from a scientific perspective.*

## References

1. [The Hindu | The geoh heritage value of Ram Setu](#)
2. [The Hindu | Ram Setu: Supreme Court questions delay in Centre's response](#)
3. [The Indian Express | The myth and mystery behind Ram Setu](#)

