

Theri desert of TamilNadu

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In news– A small desert **made up of red sand dunes** restricted to the Thoothukudi district is found in Tamil Nadu.

About Theri desert of TamilNadu-

- The **dunes are spread over Kuthiraimozhi theri (2,387.12 hectares) and Sathankulam (899.08 ha) reserve forest of Tiruchendur taluk**, which is located on the shoreline overlooking the Bay of Bengal in the south-eastern part of Tamil Nadu.
- The **red dunes are called *theri* in Tamil**.
- They consist of sediments dating back to the **Quaternary Period and are made of marine deposits**.
- They have **very low water and nutrient retention capacity**. The dunes are **susceptible to aerodynamic lift**, the push that lets something move up. (It is the force that is the opposite of weight).
- The petrographical study (petrography is the study of composition and properties of rocks) and X-ray diffraction analysis (a method used to determine a material's crystallographic structure) of the red sand dunes reveal the **presence of heavy and light minerals**.
- **The iron-rich heavy minerals like ilmenite, magnetite, garnet, hypersthene and rutile present in the soil** had undergone leaching by surface water and were then oxidised because of the favourable semi-arid climatic conditions.

Factors that led to sand dune formation-

- Theris appear as gentle, undulating terrain and the **lithology (the study of general physical characteristics of rocks) of the area shows that the area might have been a paleo (ancient) coast in the past**.
- The present-day theris might have been formed by the

confinement of beach sand locally, after regression of the sea.

- Another view is that these are **geological formations** that appeared in a period of a few hundred years.
- **The red sand is brought from the surface of a broad belt of red loam in the plains of the Nanguneri region** (about 57 kilometres from this area in Tirunelveli district) **by south west monsoon winds** during May-September.
- **Deforestation and absence of vegetative cover in the Aralvaimozhi gap and the Nanguneri plains are considered to be the major causes of wind erosion.**
- These processes of erosion, transport and deposit of sediments that are caused by wind at or near the surface of the earth, are called **Aeolian processes**.
- **They lead to continual sand redistribution.**
- When the high velocity wind blowing sand above the ground meets any obstruction like a fence post, bush, shrub or any other vegetation, the force of the wind is checked and the sand is deposited on the leeward side of the obstruction and in due course of time, a dune is formed.