MORE RAINFALL IN WESTERN GHATS – GEOGRAPHY

NEWS: A study by researchers at the **Central University of Kerala (CUK)** has found a **significant increase in monsoon rainfall in the Western Ghats** over the past 800 years.

WHAT'S IN THE NEWS?

Key Findings of the Study

- Researchers studied sediment layers from Cheppandikere Lake in Karnataka to reconstruct Indian monsoon variability over the past 1,600 years.
- The findings indicate that extreme events like the 2018–2019 floods and landslides in Wayanad and Kodagu are not isolated but part of a broader, long-term climatic pattern.
- The study stresses the urgent need for disaster risk preparedness, sustainable land-use strategies, and ecosystem conservation to tackle recurring climatic challenges.

About the Western Ghats

Location and Extent

- The Western Ghats stretch along the western coast of India for about 1,600 kilometers, covering six states: Gujarat, Maharashtra, Goa, Karnataka, Kerala, and Tamil Nadu.

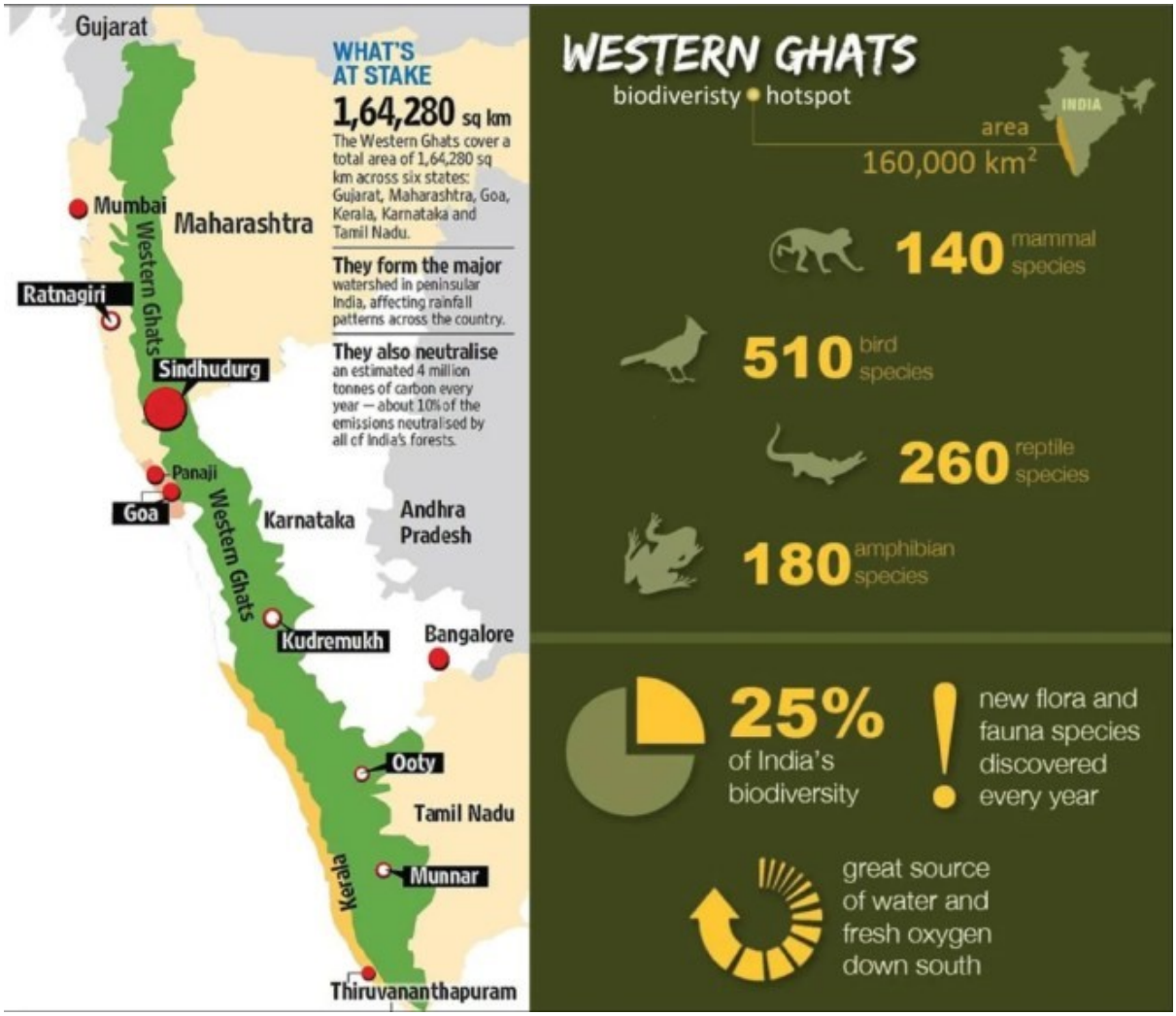
Geological Formation

- These mountains were formed approximately 150 million years ago due to tectonic shifts during the disintegration of the Gondwana supercontinent.
- The northern section primarily consists of basaltic rock (Deccan Traps), while the southern section is composed of older granite and gneiss rock formations.

Biodiversity and Environmental Significance

- Recognized as a UNESCO World Heritage Site, the Western Ghats are one of the most important global biodiversity hotspots.
- The region harbors numerous endemic species such as the Lion-tailed Macaque, Malabar Giant Squirrel, and King Cobra, found nowhere else in the world.
- The forests include tropical evergreen, semi-evergreen, and unique shola-grassland ecosystems that support rich biodiversity.

- Major rivers including the Godavari, Krishna, Kaveri, and Tungabhadra originate in these mountains, supplying water to vast regions of southern India.
- The Ghats influence monsoon patterns by acting as a physical barrier to the southwest monsoon winds, thereby determining rainfall distribution.
- They also contribute to carbon sequestration, thus playing a role in mitigating climate change impacts.



Cultural and Historical Significance

- The region is home to many indigenous tribes who have preserved traditional ecological knowledge, spiritual practices, and sustainable resource use techniques.
- Sacred religious sites like Sabarimala in Kerala and Shravanabelagola in Karnataka highlight the spiritual value of these landscapes to Hindu and Jain communities.
- Traditional crafts, bamboo work, herbal medicine, and textile weaving continue to thrive in the region, reflecting its deep cultural roots.

Conservation Efforts

- Several protected areas including national parks, wildlife sanctuaries, and biosphere reserves have been established to conserve biodiversity and critical habitats.
- Silent Valley National Park in Kerala is a notable example of conservation success, sheltering rare and endangered species.
- Eco-tourism programs are being encouraged as a means to combine environmental awareness, conservation, and local economic benefit.
- Both government bodies and NGOs are actively involved in afforestation, habitat restoration, and community-led conservation initiatives.

Challenges and Future Prospects

- Climate change is causing shifts in monsoon behavior, increasing the frequency and intensity of floods, landslides, and erosion in the region.
- The creation of green corridors and the implementation of localized disaster management systems are vital for long-term resilience.
- Promotion of sustainable agriculture, organic farming, and responsible tourism is essential to protect the delicate ecosystems of the Ghats.
- Engaging local communities in environmental governance, land-use planning, and conservation efforts will ensure more effective and inclusive outcomes.

Conclusion

- The research highlights the importance of long-term, proactive environmental policies to address the growing challenges posed by a changing monsoon and to safeguard the ecological and cultural richness of the Western Ghats.

Source: https://www.thehindu.com/news/national/kerala/study-reveals-rainfall-increase-in-western-ghats-over-800-years/article69396157.ece