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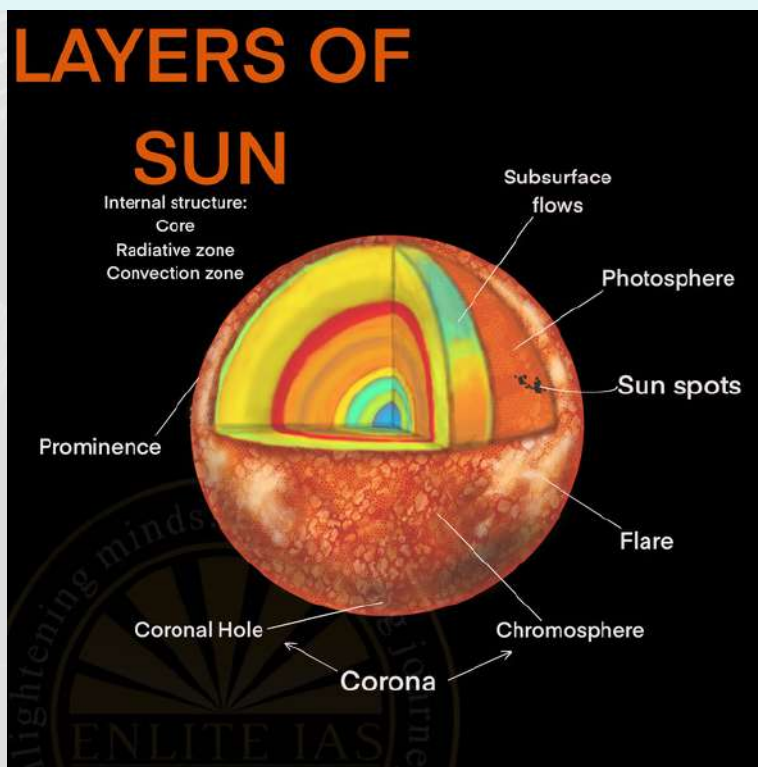
1 Solar Flares and Layers of the Sun (Source: The Hindu)

Solar Flares

- A solar flare is a sudden and intense burst of electromagnetic radiation from the Sun's atmosphere, caused by the rapid release of magnetic energy. They commonly occur near sunspots, where magnetic fields are highly active.

Layers of the Sun

- **Photosphere**
 - The photosphere is an extremely uneven, bright outer layer of the Sun that emits most of the radiation.
 - The temperature on the outer side of the photosphere is 6000°C.
- **Chromosphere**
 - Above the photosphere is the chromosphere.
 - It is a thin layer of burning gases.
 - It is comparatively cooler – 4320°C
- **Corona**
 - A corona is a distinctive atmosphere of plasma that surrounds the Sun and other celestial bodies.
 - The Sun's corona extends millions of kilometres into space and is most easily seen during a total solar eclipse.
 - The solar wind is an outflow of gas from the corona.



2 Ecological Impact on Himalayas (Source: The Indian Express)



ECOLOGICAL IMPACT ON HIMALAYAS

The Himalayas – water tower and ecological sentinel of Asia – are facing unprecedented environmental stress.

WHY HIMALAYAS MATTER

- Source of major rivers supporting ~1.9 billion people
- Rich biodiversity hotspot with unique flora & fauna
- Regulates climate and monsoon patterns
- Home to diverse indigenous communities and cultures

KEY ECOLOGICAL IMPACTS



1. GLACIER RETREAT & SNOW DECLINE

- Rising temperatures cause rapid glacier melting.
- Reduces long-term water availability.
- Threatens freshwater security for downstream regions.



2. LANDSLIDES & SOIL EROSION

- Deforestation, road cutting and unplanned construction destabilize slopes.
- Increases frequency of landslides and soil erosion.
- Leads to loss of fertile soil and habitat degradation.



3. FLOODS & GLOF RISKS

- Melting glaciers form unstable glacial lakes.
- Outburst floods (GLOFs) cause devastation to valleys and ecosystems.
- Intensified by extreme rainfall events.



4. BIODIVERSITY LOSS

- Habitat fragmentation due to infrastructure and urbanization.
- Decline in alpine meadows, medicinal plants and endemic species.
- Threatens wildlife corridors and species survival.



5. POLLUTION & WASTE

- Increasing solid waste, plastic and sewage in fragile valleys.
- Pollutes rivers and soils, harmful to aquatic and terrestrial life.
- Tourism pressure worsens waste management.



6. CLIMATE CHANGE AMPLIFICATION

- Himalayas are warming faster than global average.
- Alters rainfall patterns, shifts seasons and increases extreme events.
- Impacts agriculture, hydrology and ecosystems.



7. DEGRADATION OF ALPINE MEADOWS

- Overgrazing, tourism and climate change degrade alpine meadows.
- Reduces carbon sequestration and soil moisture retention.
- Affects biodiversity and livelihoods of local communities.



8. HUMAN-WILDLIFE CONFLICT

- Habitat loss pushes wildlife into human settlements.
- Leads to crop damage, livestock loss and biodiversity stress.
- Disrupts ecological balance and local livelihoods.



9. IMPACT ON LOCAL COMMUNITIES

- Resource scarcity affects water, fuel, fodder and food.
- Traditional knowledge systems are under threat.
- Increases vulnerability of mountain communities.

WAY FORWARD – TOWARDS ECOLOGICAL RESILIENCE



Conserve forests & restore degraded ecosystems



Promote sustainable tourism and carrying capacity planning



Strengthen disaster risk reduction and early warning systems



Reduce pollution, manage waste responsibly



Empower local communities & traditional knowledge



Address climate change through global cooperation



OUR RESPONSIBILITY

Protecting the Himalayas is not just a regional priority, it is essential for the ecological security, water security and sustainable future of Asia and the world.



HEALTHY HIMALAYAS, SECURE FUTURE

Preserve Today, Sustain Tomorrow.